U.motion

U.motion KNX Server
U.motion KNX Server Plus

Installation Manual

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by Schneider Electric

GENERAL INFORMATION

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Note: please read the manual **before** beginning and keep the manual for later use.

Audience: the manual has been conceived and written for users who are experienced in the use of PCs and automation technology.

CONVENTIONS

[KEY]	Keys that are to be pressed by the user are given in square brackets, e.g. [CTRL] or [DEL]
Courier	On-screen messages are given in the Courier font, e.g. C:\>
Courier bold	input to be made by the user are given in Courier bold, e.g. C:\>DIR).
„…“ (double quotes)	Names of buttons to be pressed, menus or other onscreen elements and product names are given within double quotes. (e.g. “Configuration”).
Symbolic	In this manual the following symbolic are used to indicate particular text blocs.
	Caution! A dangerous situation may arise that may cause damage to material.
	Note. Hint and additional notes

SAFETY INSTRUCTIONS

The present operating instructions contain those safety instructions that are required to safely operate the machine.

All persons working with the machine must heed the present operating instructions, especially the safety instructions.

In addition, all local stipulations governing the prevention of accidents must be heeded.

Only trained and authorized personnel may install and operate the machine.

Proper application: The machine has been designed for application in a building environment.

The machine meets the requirements of the EMC guidelines and of the harmonized European standards. Modifications to the machine hardware may affect the system's EMC compatibility.

Without special protection measures, the machine must not be used in EX areas and in plants that require special monitoring.

Danger of explosion. Do not expose the buffer batteries to heat. Serious injury may be the result.

The operating voltage of the machine must be within the specified range! The product label provides the required information.

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1 First Commissioning

1.1 Introduction

U.motion KNX Server is a web server for monitoring and visualising home & building Automation systems, which have been realized on the base of the worldwide KNX standard. The configuration and use of U.motion KNX Server takes place directly through its web interface, which can be accessed through a conventional browser (from any device / operating system).

This chapter describes how to connect and configure U.motion KNX Server, so that a successful integration into the own system can occur.

1.2 Content of the Packaging

The U.motion KNX Server packaging contains the following material:

- U.motion KNX Server or U.motion KNX Server Plus
- Connector for power supply and KNX bus
- Safety notes/General notes
- Quick Start Guide
- U.motion USB Stick: documentation and software

Hint: U.motion KNX Server is a pure web server and not usable for standalone visualisation, because it has no display. The visualisation is accessed through client PCs like e.g. the U.motion Client Touch series, which connect via network to the server. The server has no graphical interface (VGA, DVI, HDMI, ...) and therefore can't display any graphical contents.

Within this manual the denomination „U.motion KNX Server" references to both products U.motion KNX Server and U.motion KNX Server Plus, if not named differently in the corresponding text. The differences between the 2 server versions can be found in the corresponding datasheets, available separately.

1.3 INSTALLATION, CONNECTION AND COMMISSIONING

1.3.1 INSTALLATION AND CONNECTION

U.motion KNX Server is, like most KNX components, mounted on a DIN rail. For a correct function, the following connections must be guaranteed:

- Power supply 12V / 24V DC (current consumption 240 mA a 12V) using the supplied connector
- KNX bus connection via supplied connector
- Network connection via CAT5 network cable

The LED marked with the label "POWER" on the front of the server signals that the power supply is active, while the "SERVICE" LED remains off in normal circumstances.

U.motion KNX Server has furthermore the following interfaces:

- SD-slot: to expand the memory of U.motion KNX Server with an appropriate SD-card

Hint: The actual software version doesn't support the SD-slot.

Hint: the connection to the KNX bus is not really needed for the configuration of U.motion KNX Server, but it allows a more efficient programming, since direct tests of the system can be performed.

When commissioning U.motion KNX Server, the following steps must be followed:

- Power off the system/installation
- Install U.motion KNX Server on a DIN-Rail
- Connect power supply and KNX bus to U.motion KNX Server
- Power on the system/installation
- Wait until U.motion KNX Server has booted up

ATTENTION!
If the U.motion KNX Server hardware is changed, irreversible damage can occur. Any intervention on the equipment should be performed only by authorized personnel of U.motion KNX Server.

1.3.2 ENVIRONMENTAL CONDITIONS

The correct function of U.motion KNX Server can be granted only if the following requests are met:

OPERATION	Ambient temperature 0°C - 70°C

1.3.3 COMMISSIONING

U.motion KNX Server is power supplied by a power adapter NOT included in the U.motion KNX Server packaging.

The device supports power supply voltages of 12/24V DC.

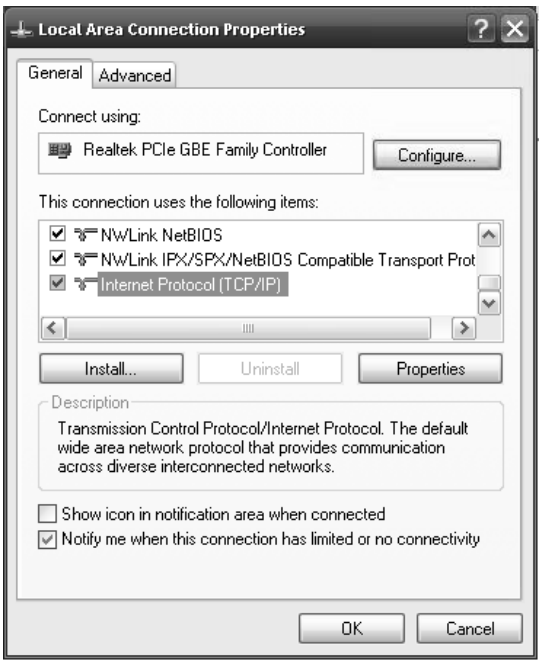
ATTENTION! Before commissioning U.motion KNX Server all connections must be checked! Verify that the voltage of the connected power supply doesn't exceed the supported voltage range, in order to avoid damage on the device!

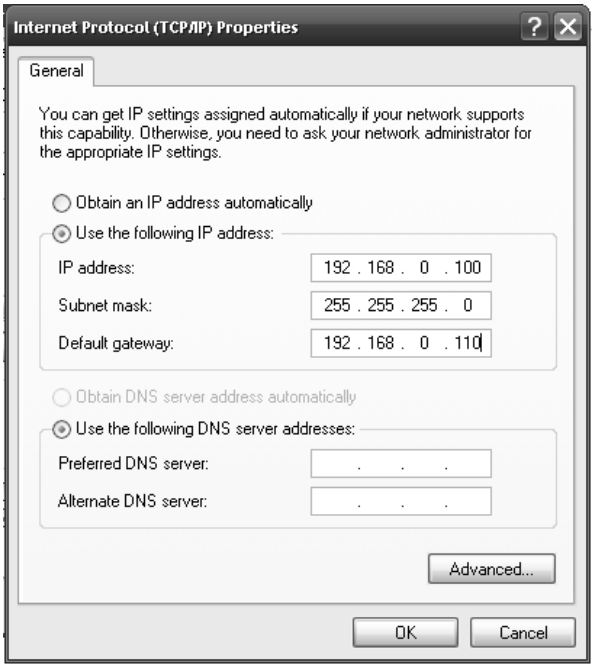
1.4 NETWORK CONNECTION

For the usage/configuration of U.motion KNX Server a working network connection is required. In order to make the first access to U.motion KNX Server, or if a compatible network is not available, follow these steps:

- Connect U.motion KNX Server through a crossed network cable ("crossover-cable") with your PC
- Open the network configuration of your PC
- Change the settings of the TCP/IP – Protocol (Version 4) of the network interface, on which you connected the network cable and enter the following values:
  - IP address: 192.168.0.100
  - Subnet mask: 255.255.255.0
  - Gateway: 192.168.0.110
- Save the new settings; depending on the installed OS a restart can be necessary.

The following screenshots show how to change the network settings on Windows XP:

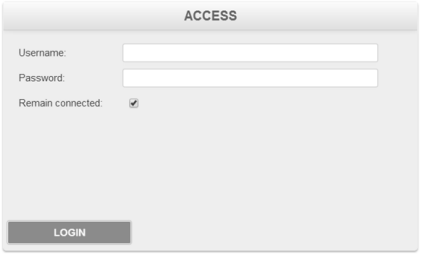



Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address: 192 . 168 . 0 . 100
Subnet mask: 255 . 255 . 255 . 0
Default gateway: 192 . 168 . 0 . 110
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

Once the network settings have been changed, open a browser on your PC (Google Chrome preferred) and enter the following URL into the address bar of the browser:

http://192.168.0.110/umotion/modules/system/externalframe.php?context=configuration

This link will open directly the configuration menu of U.motion KNX Server; if the network connection is working properly you will see the following screen:



Alternatively, you can also just enter the IP address of U.motion KNX Server in the browser address bar. In this case, the login window of the visualisation is displayed. After login (see next section), the configuration menu can be reached by clicking on the ADMIN button in the toolbar (more details in the "User manual" or in chapter 1.6 of this manual).

Note: U.motion KNX Server is limited to only one remote access from another PC (Desktop, Laptop), which is meant for programming the device. The access from mobile devices or U.motion Client Touch 7 through the U.motion Control-App is not limited!

The maximum comfort for using/programming U.motion KNX Server can be achieved with the following browsers:

- Google Chrome
- Apple Safari

However, it is not recommended to use the following browsers, because they can't represent all the functions of U.motion KNX Server correctly:

- Microsoft Internet Explorer
- Opera
- Mozilla Firefox

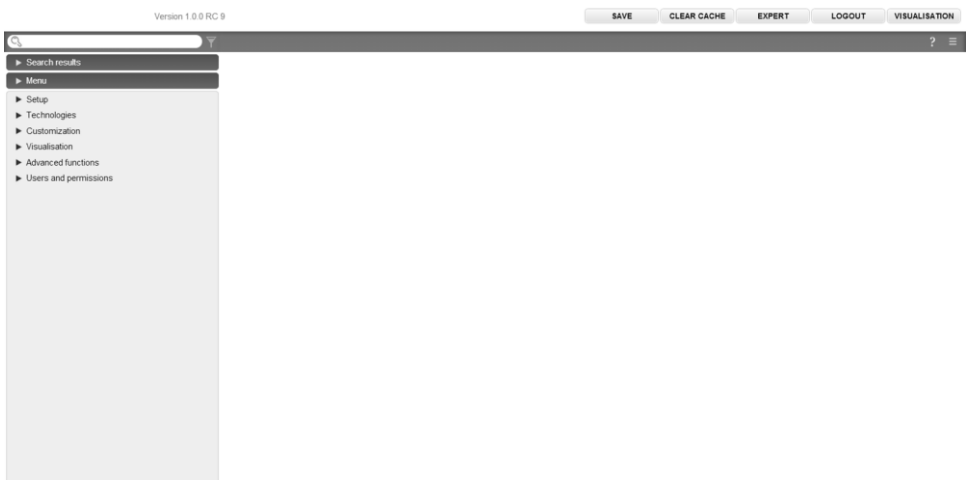
The browser compatibility is continuously under development, it is recommended to check out the list of the compatible browsers in the documentation of newly released product versions.

1.5 Access

On delivery U.motion KNX Server has preconfigured the following users:

Username	Password	Description
admin	admin	System Administrator. Can edit the visualisation, create users and change their access rights / permissions
manager	manager	User for the installation / configuration of the system. It can change all settings regarding the visualisation, but has no access to system settings.
user	user	Basic user for client-access. It can navigate through the whole visualisation, but has no or very limited access to the administration of U.motion KNX Server.

On the first configuration of U.motion KNX Server you must login with the "admin" user. Do this by entering the appropriate data into the login screen; once logged in you will see the following screen:



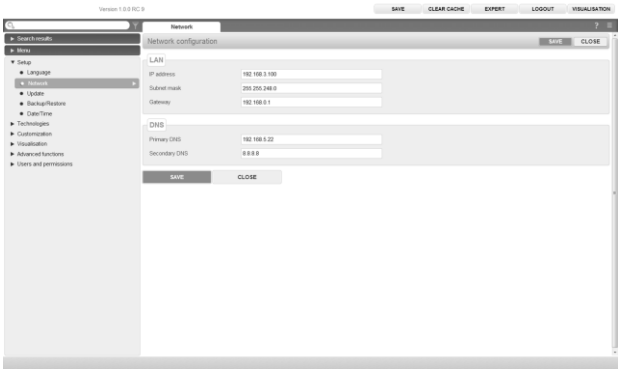
1.6 ADMINISTRATION AND VISUALISATION AREA

The interface of U.motion KNX Server is split into two areas:

- "ADMINISTRATION" or "BACKEND": Configuration area, in which (depending on the users permissions) each aspect of the web server and visualisation can be modified
- "VISUALISATION": Visualisation area, designed for being used by the final user. It allows to navigate inside the single rooms/pages of the visualisation, which were configured in the ADMINISTRATION before, and controlling KNX objects in real-time

Both areas are based on web technology and can therefore be controlled from within a browser window. The main difference between the two levels is the graphical design:

- The ADMINISTRATION is kept in a simple graphic style and was optimized to represent the maximum amount of information and option windows in a clear form.



- The VISUALISATION was designed to allow the inexperienced users the most intuitive and easy navigation. The high-end design of the VISUALISATION makes it very comfortable for the final customer to use the visualisation.

To switch between the two areas the appropriate button in the current areas can be used:

- From within the ADMINISTRATION it is possible to reach the VISUALISATION by clicking on the respective button in the upper right corner
- From within the VISUALISATION it is possible to reach the ADMINISTRATION by clicking the entry "ADMIN" in the upper right menu (only accessible if the toolbar is extended); of course the user must have the permissions to access the ADMINISTRATION (further information can be found in the „User manual").

Alternatively the two areas can be accessed directly by entering the following links inside the browsers address bar:

LEVEL	EXAMPLE
ADMINISTRATION	http://192.168.0.110/umotion/modules/system/externalframe.php?context=configuration
VISUALISATION	http://192.168.0.110/umotion/modules/system/externalframe.php?context=runtime

To save time during configuration, both areas can be displayed simultaneously in different tabs of the browser, which makes it faster to switch between the areas.

1.7 RESET OF THE IP ADDRESS

The IP address of U.motion KNX Server can be reset to factory settings through the RESET-button on the bottom side of the device:

- Localize the RESET-button on the device and get a screw driver or a similar tool with a small diameter to reach the RESET-button through the small cutout in the housing of the device.
- Press the RESET-button until the SERVICE-LED starts blinking (minimum 10 seconds); afterwards release the RESET-button.
- Press the RESET-button again within the next 5 seconds for max. 1-2 seconds and release the RESET-button afterwards; after a short pause the SERVICE-LED stays on for some seconds.
- AS soon as the SERVICE-LED turns off, U.motion KNX Server is reachable under the factory-IP address ("192.168.0.110")

If the SERVICE-LED stops blinking after the RESET-button was pressed for the first time (10 seconds) and before you were able to press the RESET-button again, please repeat the whole procedure.

1.8 RESET TO FACTORY SETTINGS

U.motion KNX Server can be reset to factory settings (IP address & database) through the RESET-button on the bottom side of the device:

- Localize the RESET-button on the device and get a screw driver or a similar tool with a small diameter to reach the RESET-button through the small cutout in the housing of the device.
- Press the RESET-button until the SERVICE-LED starts blinking (minimum 10 seconds); afterwards release the RESET- button.
- Press the RESET-button again within the next 5 seconds and keep the button down until the SERVICE-LED stops blinking and stays on; afterwards release the RESET-button.
- AS soon as the SERVICE-LED turns off, U.motion KNX Server is reachable under the factory-IP address ("192.168.0.110") with empty database (factory settings).

If the SERVICE-LED stops blinking after the RESET-button was pressed for the first time (10 seconds) and before you were able to press the RESET-button again, please repeat the whole procedure.

2 GENERAL OVERVIEW

2.1 INTRODUCTION

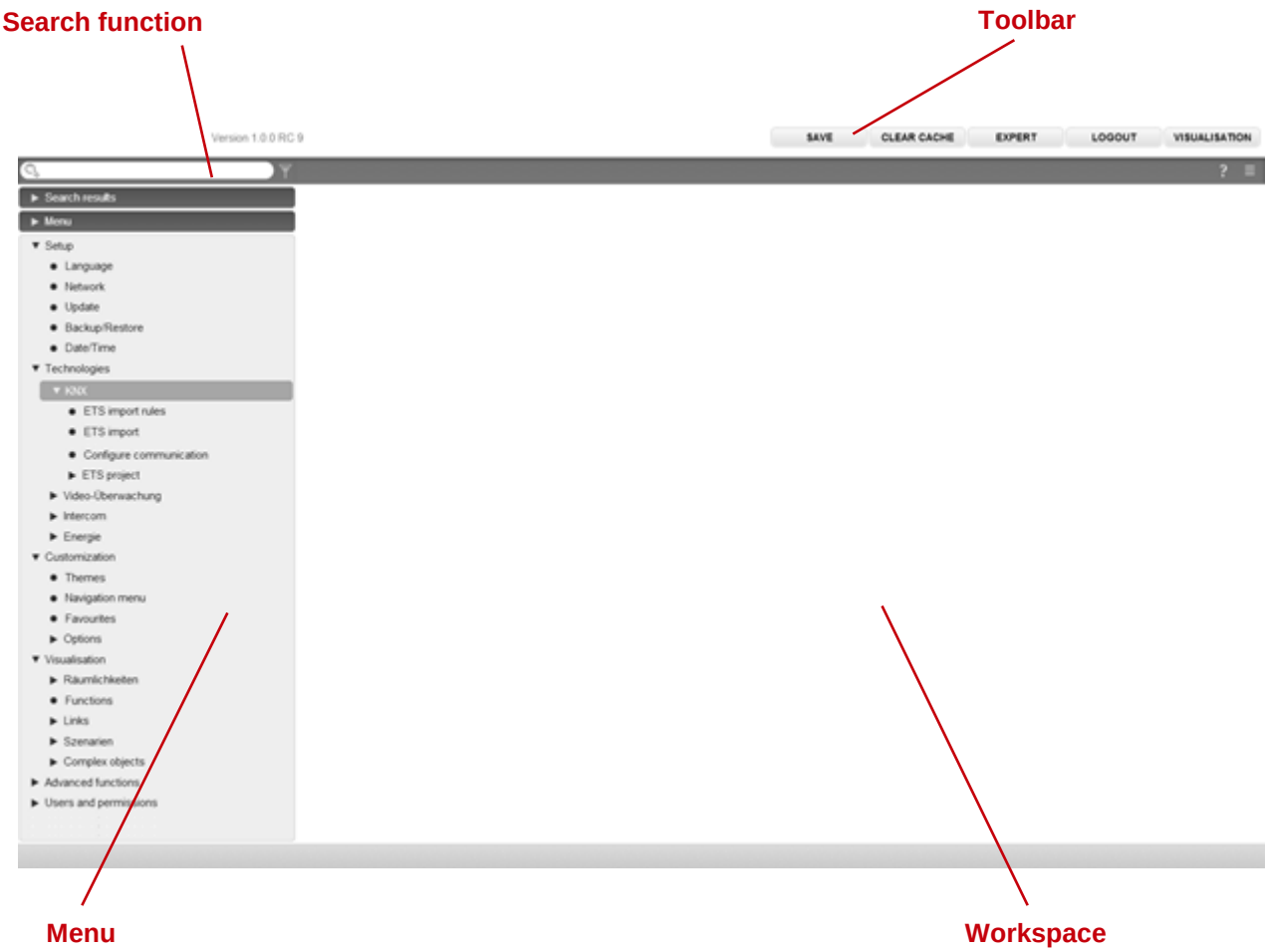
This chapter gives an overview of the ADMINISTRATION area of U.motion KNX Server and explains different tools and menus, which can be used to configure the web server.

2.2 ADMINISTRATION AREA - INTERFACE

The ADMINISTRATION is divided into the following sections:

SEARCH-FUNCTION	The search function can be found in the upper left corner in form of an input filed, which allows to find objects quickly by entering keywords related to the searched objects.
MENU	Main menu of the software, shown as a tree-view. Through this menu all sections of the software are accessible and objects can be created / modified / deleted.
TOOLBAR	The toolbar in the upper side of the ADMINISTRATION is always shown and allows switching quickly to the mostly used functions through the related buttons.
WORKSPACE	Main area for showing the chosen configuration options; the single menus and configuration windows of the objects are shown in here. It is possible to open more menus / windows in the main area at the same time; the different menus / windows will be accessible through different tabs in this case.

The following screenshot shows the single sections of the ADMINISTRATION area:



2.3 TOOLBAR

Following functions are always present in the toolbar:

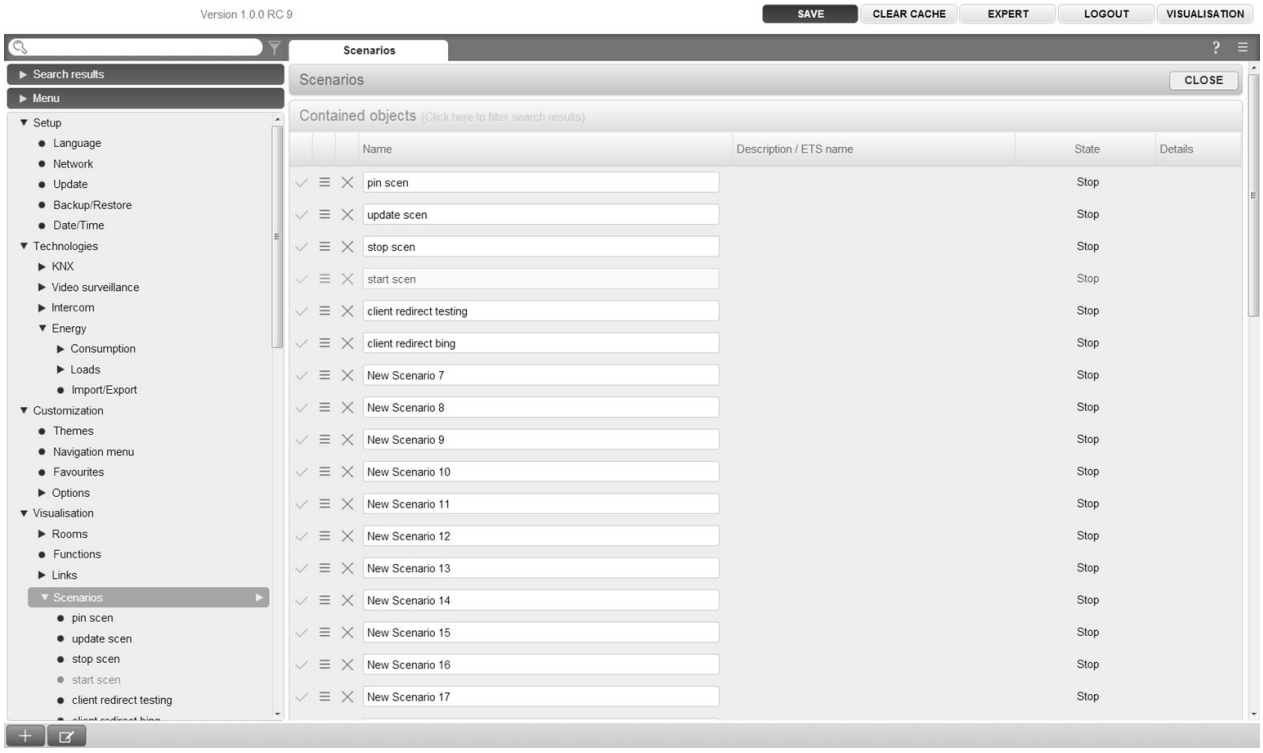
SAVE	Allows saving all changes into the flash memory of U.motion KNX Server, what will preserve the data even if the web server is powered off. The button turns red whenever changes are made, but not saved yet. In addition, every 5 minutes an automatic saving of all changes takes place, so pressing the "SAVE"-button is only necessary if the system should be shut down/restarted immediately after making the changes.
CLEAR CACHE	Allows to delete the HTML SERVER CACHE. This is especially necessary if changes made in the ADMINISTRATION are not displayed correctly in the VISUALISATION, despite the HTML CLIENT CACHE was already deleted.
BASE / EXPERT	Changes the visibility of various options / parameters within the configuration pages. The BASE mode displays only the necessary settings and visible objects; the EXPERT mode, however, shows even more advanced options as well as hidden objects.
LOGOUT	Ends the current session and allows you to log onto the web server as a different user.
VISUALISATION	Allows switching to the VISUALISATION area and therefore accessing the visualisation, now showing all modifications made in the configuration.

2.4 NAVIGATION MENU

2.4.1 USAGE

The navigation menu is a typical tree-view-menu. After accessing the ADMINISTRATION area all the main entries are shown; the sub-menus are accessed by extending the corresponding main menu. The navigation in this menu is done entirely with a mouse.

Clicking on an entry in the navigation menu turns the clicked entry into grey; if the entry has additional submenus, the entry will be extended and the sub-menus are displayed. Another click on the selected entry will close the section and hide the submenus again.



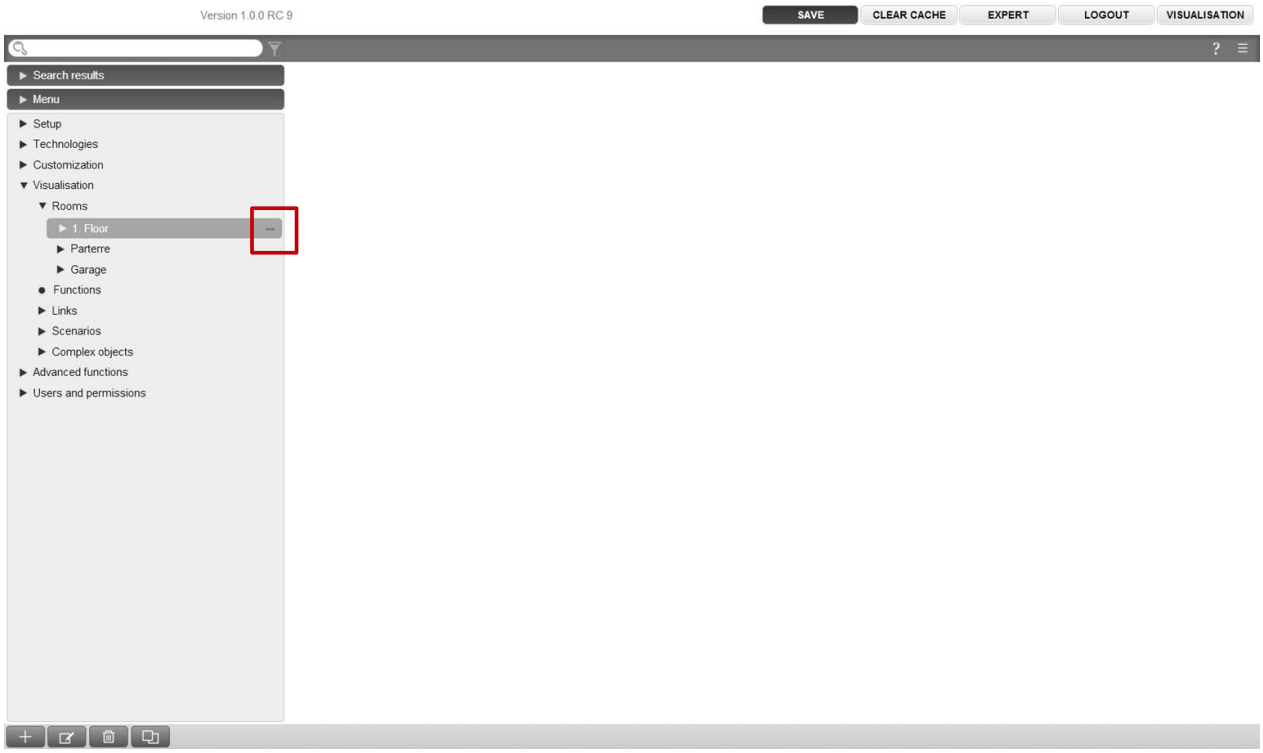
If actions can be performed for the selected entry, they will be displayed in the TOOLBAR at the bottom left corner of the navigation menu in form of different buttons. The following actions may be displayed:

NEW / ADD	Allows the creation of a new object within the selected entry. Depending on the selected item different types of objects are created; if a menu allows the creation of multiple types of objects, then a context menu will be displayed in order to select the object type to create.
DELETE	Deletes the selected entry from the project
EDIT	Allows editing of the selected entry though the appropriate configuration window, which will be opened automatically by clicking this button.
CLONE	Creates an identical copy of the object

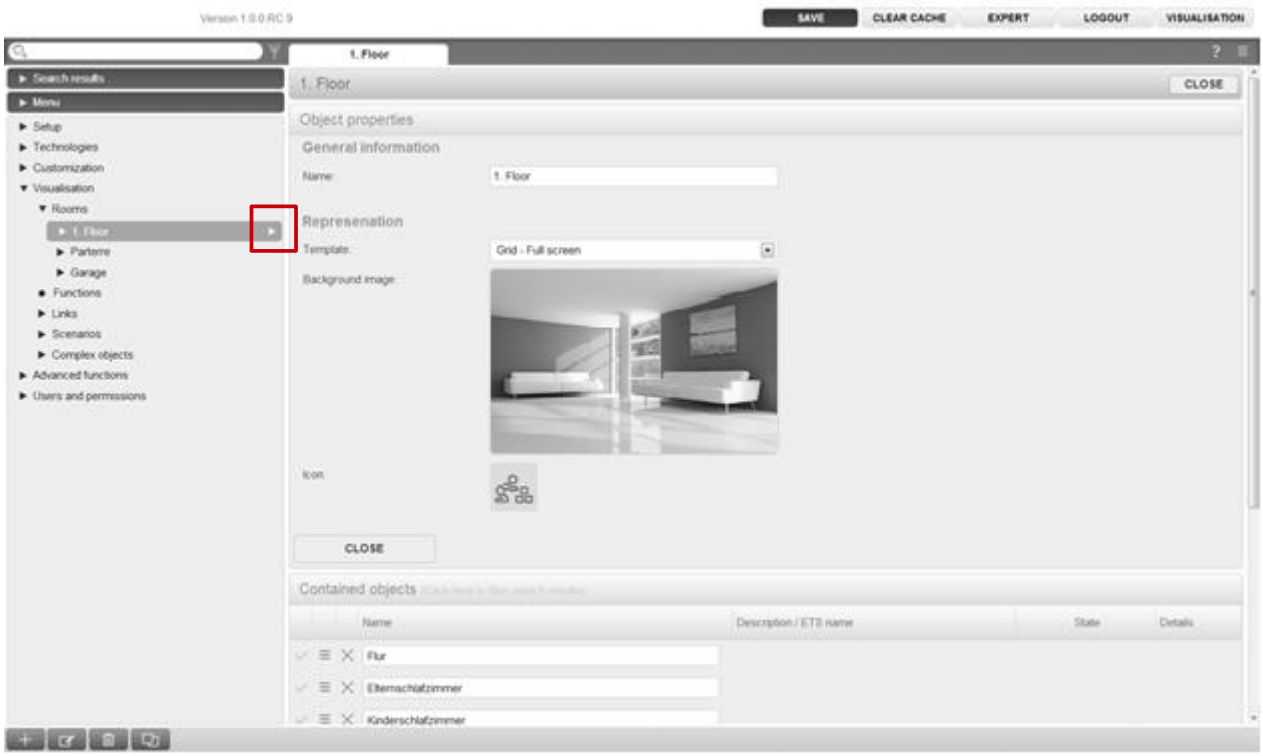
When an object is cloned, not only the objects itself is duplicated, but also all of its connections / relations with other objects. This means that the cloned object will be contained in the same rooms, logics, scenarios etc. as the original object is. Therefore, after the creation of a cloned object, all relations and connections should be checked and if necessary corrected.

Note: if the original object was present in a room with BACKGROUND view, the cloned object will be positioned AT THE SAME PLACE in the room and will cover the original object. In this case, please edit the BACKGROUND view and place the cloned object in a different position.

If the selected entry supports the EDIT-action, 3 points ("…") will be displayed on the right side of the entry. Clicking on these points has the same effect as clicking on the EDIT button in the TOOLBAR.

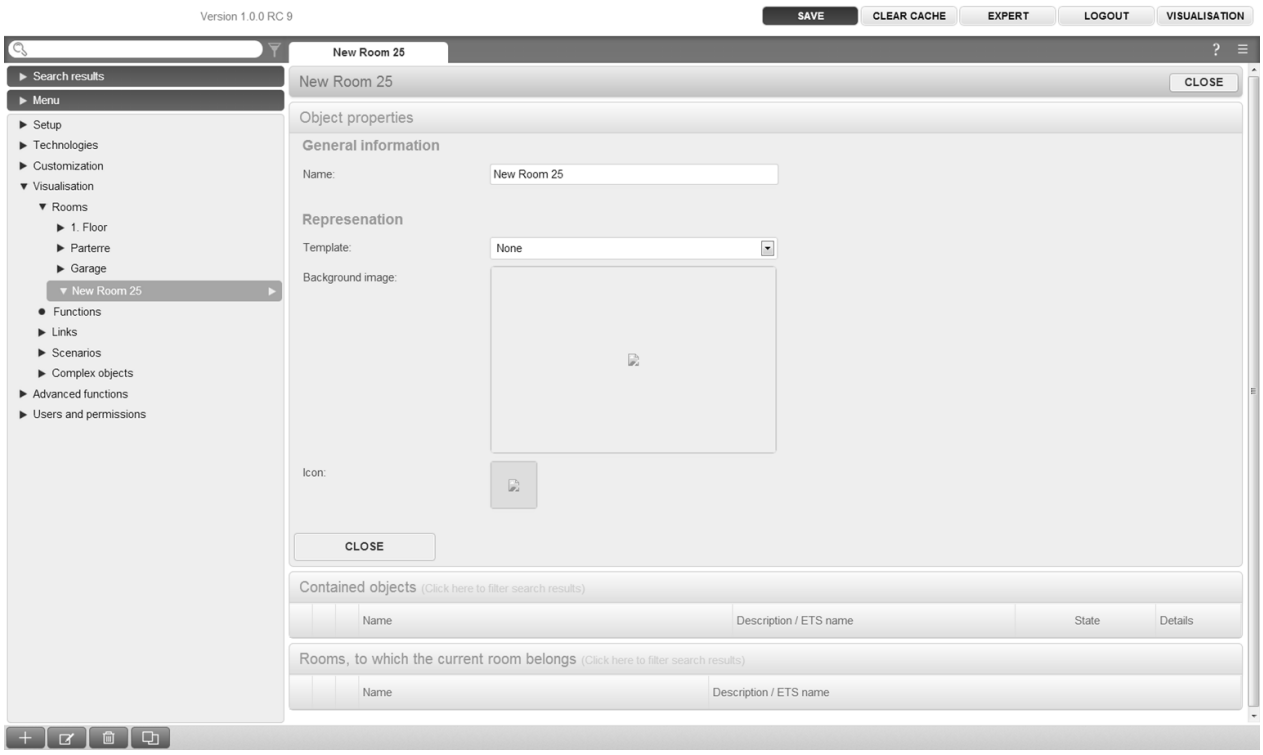


If the configuration window of an entry is opened through the EDIT-action, the entry will show an arrow-icon instead of 3 points ("…") on the right side. This icon will be displayed until the configuration window of the entry is closed and shall facilitate the navigation if multiple tabs are opened in the workspace.



As mentioned before, some of the entries of the navigation menu permit to create submenus or to insert new objects. This is done using the NEW button in the TOOLBAR: by pressing this button a new object (the object type depends on the selected entry) will be created and selected automatically. If the EDIT button (or the 3 points in the entry itself) is clicked, the configuration window of the newly created object will be opened.

Example: To create a new room, just select the entry "ROOMS" (in the main menu "VISUALISATION") and click on the NEW button. The new room will be created and - if other rooms have already been created before - shown at the end of the sub-menu:



For rooms it's also possible to create further sub-menus following the same procedure (as in the further course of this manual will be explained); the resulting tree-structure can so also be used in the visualisation.

The DELETE button removes the selected entries from the project. This action is blocked for the system menus and indispensable objects, for preventing the user to remove them by accident.

2.4.2 MENU STRUCTURE

The navigation menu permits to access every setting of the web server and has the following structure:

SETUP	Contains generic settings and parameters of the web server
TECHNOLOGIES	Contains the configuration pages of all technologies supported by the web server (KNX. Video surveillance, intercom etc.)
CUSTOMIZATION	Contains the configuration pages for customizing the graphical design of the visualisation and the web server plugins
VISUALISATION	Allows the configuration of the visualisation itself (rooms, functions, scenarios etc.)
ADVANCED FUNCTIONS	Allows the configuration of additional functions (e.g. logics, notifications etc.)
USERS AND PERMISSIONS	Allows the configuration of new users and their access permissions

2.4.3 SETUP

The menu SETUP contains the following entries:

LANGUAGE	Permits to change the language of the GUI
NETWORK	Permits to configure the network parameters of U.motion KNX Server
UPDATE	Permits to update the web server through specific update-packages
BACKUP/RESTORE	Permits to create a backup of the current database, to import an already created backup or to reset the database to factory settings
DATE/TIME	Permits to configure date/time of the web server and all date/time related settings

Further information can be found in the appropriate section of this manual.

2.4.4 TECHNOLOGIES - KNX

This section contains all settings for establishing a communication with the KNX bus:

ETS-IMPORT-RULES	Permits to configure import-rules, through which the imported group addresses will automatically be configured and connected to the desired icon/function, in dependence of the defined keywords
ETS IMPORT	Allows the import of a ETS-project into U.motion KNX Server
CONFIGURE COMMUNICATION	Permits to change the parameters of the used KNX communication interface
ETS PROJECT	Permits to navigate through the single group addresses and to edit them; the navigation structure will be the same as the one in ETS.

2.4.5 TECHNOLOGIES – VIDEO SURVEILLANCE

In this section IP cameras can be integrated into the visualisation; they can be reached inside the visualisation by clicking on the related icon in the navigation menu.

2.4.6 TECHNOLOGIES – INTERCOM (ONLY U.MOTION KNX SERVER PLUS)

This section contains several configuration menus for using U.motion KNX Server Plus as VoIP server (for the integration of door communication systems):

VOIP participants	IP phones or softphones (with SIP protocol support)
EXTERNAL UNITS	Compatible video or audio door stations (SIP-Protocol support is necessary, supported video format: MJPG)
CALL GROUPS	External and internal units can be grouped into a call group; by calling a call group, all the internal and external units belonging to the call group will start ringing.
CLIENTS	Here are all client objects listed, which can be used for Intercom communication
USER	Here are all user objects listed, which can be used for Intercom communication
SETTINGS	Generic parameters of the SIP server configuration

2.4.7 TECHNOLOGIES – ENERGY

This section allows monitoring and control loads:

CONSUMPTION	Representation of the energy consumption of loads, even in graphical form
LOADS	Control of loads depending on the overall power consumption (power consumption optimization)
IMPORT/EXPORT	Import/Export of recorded data

2.4.8 CUSTOMIZATION

This section contains the following entries:

THEMES	Permits to change the design (theme) of the VISUALISATION
NAVIGATION MENU	Permits to personalize the navigation menu of the VISUALISATION
FAVOURITES	Permits to change the favourites page of the VISUALISATION
OPTIONS	Allows the configuration of several aspects / plugins of the VISUALISATION

Further information about customization can be found in chapter 4 of this manual.

2.4.9 CUSTOMIZATION – NAVIGATION MENU

This entry permits to customize the navigation menu of the VISUALISATION area. Existing entries can be hidden (only possible in EXPERT mode) and also rooms (see next section) can be added to the navigation menu. Therefore, proceed as described below:

- Open the settings window of the entry NAVIGATION MENU by clicking the 3 points or the EDIT button
- Search the desired room by using the search function (see chapter 2.5 for further information about the search function)
- Drag the selected room inside the configuration window of the navigation menu and drop it there

In this way rooms can directly be added into the navigation menu and so they are visible in the home screen inside the navigation menu (and also directly in the main page of the VISUALISATION, if this option is active). Furthermore, any

system entry access, which is not desired, can be easily hidden from the navigation menu; in this way the VISUALISATION can be directly adapted to the customer's needs.

2.4.10 VISUALISATION - ROOMS

This section allows the configuration of the rooms inside the visualisation. This section is initially empty and allows the creation of new rooms (from a technical point of view objects of type "GROUP"), which can contain other rooms or other objects supported by U.motion KNX Server.

For each room a so called *Template* can be selected. Depending on the selected THEME different Templates are available. Currently the following *Templates* are available:

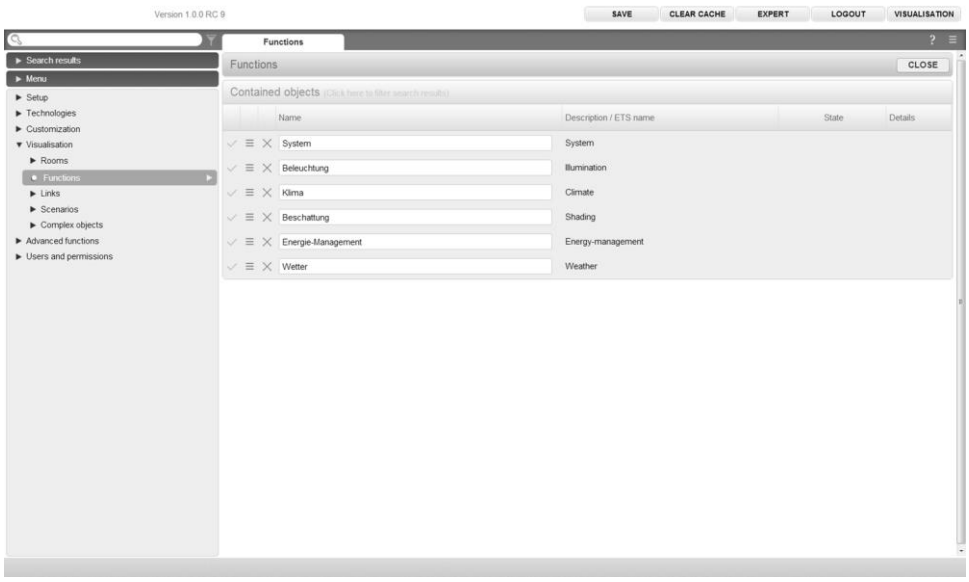
BACKGROUND	Background image (photo, graphic rendering, plan), on which the single control objects are positioned. Clicking on such a control object, it either sends the related command on the KNX bus or opens a box containing further control options.
GRID Image: • FULLSCREEN • ON TOP • ON RIGHT • ON LEFT	Shows the contained objects in table-form. Depending on the type of object, it can be controlled directly by clicking on the related buttons of the object or a pop-up window is opened with additional controls, when the object is clicked. The grid may also include an image file that is positioned depending on the selected template.

If the entry ROOMS is selected directly and its configuration window is opened by clicking on the EDIT button, the order of the contained rooms can be changed. Since this group belongs to the system, no other settings are available.

2.4.11 VISUALISATION - FUNCTIONS

This section allows the organization of the FUNCTIONS, which group the KNX objects automatically based on their typology. If an object is for example linked with the FUNCTION "Illumination", it is automatically copied into the group "Illumination" of the FUNCTIONS. This group can be called directly in the VISUALISATION, providing quick access to the objects of the same typology.

After activating the EXPERT-mode (see chapter 2.3) through the appropriate button in the toolbar, for each FUNCTION it can be defined whether it should be visible in the VISUALISATION or not:



Furthermore, the order of the single entries can be changed. Click on the grey ORDER-button of an entry, drag it up or down to the desired position and drop it there to fix the entry in the new position. The new sequence is shown in the VISUALISATION after accessing the FUNCTIONS menu again.

Further information can be found in chapter 7 of this manual.

2.4.12 VISUALISATION – LINKS

This section allows the configuration of links. Using these objects you can create page jumps to other rooms of the visualisation or even to external web contents (like the contents of a web server or a homepage).

Further information can be found in chapter 10 of this manual.

2.4.13 VISUALISATION - SCENARIOS

This section allows the configuration of scenarios. With scenarios, multiple actions can be launched sequentially- if necessary also time delayed – with only one click. Scenarios can also be started as a passive event by other objects or via scheduling.

The order of the single scenarios can be changed by opening the configuration menu of the SCENARIOS entry and by moving the single scenarios to the desired position through drag and drop. In EXPERT mode it is also possible to define for each scenario if it should be visible in the VISUALISATION or not.

Further information can be found in chapter 9 of this manual.

2.4.14 VISUALISATION – COMPLEX OBJECTS

This section allows the configuration of so-called complex objects, in which KNX objects of the same device can be grouped and therefore will be accessible and operable in one of the available templates (for example: thermostats, blinds, dimming, RGB control, etc.). For more information, refer to chapter 8 of this manual.

2.4.15 ADVANCED FUNCTIONS

This section permits to extend the system with functionalities that are not programmed on KNX level. The following advanced functions are available:

LOGICS	Allows AND/OR operations on 1bit KNX-objects
CONDITIONS	Permits to compare a value of one or more objects with a fixed value and to define events, which are launched in dependency of the comparison result
VIRTUAL OBJECTS	Permits to create virtual objects for example for saving values, for connecting passive and active events etc.
INTEGRATORS	Permits to observe / evaluate values over a given time period; specially convenient for evaluating energy-values
NOTIFICATIONS	Permits to send notifications (either “on screen” or via mail) in dependency of events within the installation
CLIENTS	Permits to create relations between the devices connected to U.motion KNX Server (each connected device will be shown as CLIENT) and different actions of the software, like e.g. scenarios, VoIP actions, …

2.5 SEARCH FUNCTION

By entering one or more keywords into the search box in the upper left corner, the software searches for all objects, which include the specified keyword in their names or other primary properties. The results are displayed in the left area instead of the navigation menu, which is minimized for this purpose:

The results are shown together with the following information:

NAME	Name of the object inside the software's database
TYPE	Object-type; shown directly under the name of the object
PRIMARY PROPERTY	If available, on the right side the primary property of an object is shown (for example: the group address of a KNX object)

By setting a search filter, only relevant object types are displayed in the search result. Search filters can be activated by clicking on the corresponding description in the properties of an object. If, for example, a search filter for KNX group addresses is active, only objects of type "KNX group address" matching the specified search word are displayed in the search results. By clicking on the FILTER-icon to the right of the search box, such a search filter can be disabled.

A result entry will be colored green if it is clicked; as within the navigation menu, there will appear some action buttons in the bottom toolbar, if the selected object allows editing. In this case, the 3 points on the right side of the selected entry will be visible, enabling a quicker access to the property window.

It is possible to change the objects name directly in the search engine with a simple double click on the whished item in the list of search results.

This way the search engine can be used to do fast customizations.

The search function also supports the **multiple selection** of objects by holding the CTRL key of your keyboard while selecting the desired objects with the mouse. The selected objects will all be colored green:

The TOOLBAR can show the following action buttons:

EDIT	Opens the configuration window of the selected objects
DELETE	Removes the selected objects from the project
CLONE	Clones the selected objects

The CLONE-action creates a one-on-one copy of the selected objects. After the execution of this command, the search results are refreshed and also the cloned objects will be shown (can be recognized from the prequel "Copy of ...").

When cloning an object, not only the objects itself is duplicated, but also all of its connections / relations with other objects This means that the cloned object will be contained in the same rooms, logics, scenarios etc. as also the original object. Therefore, after the creation of a cloned object, all relations and connections should be checked and – if necessary – corrected.

Note: if the original object was present in a room with BACKGROUND view, the cloned object will be positioned AT THE SAME PLACE in the room and will cover the original object. In this case, please edit the BACKGROUND view and place the cloned object in a different position.

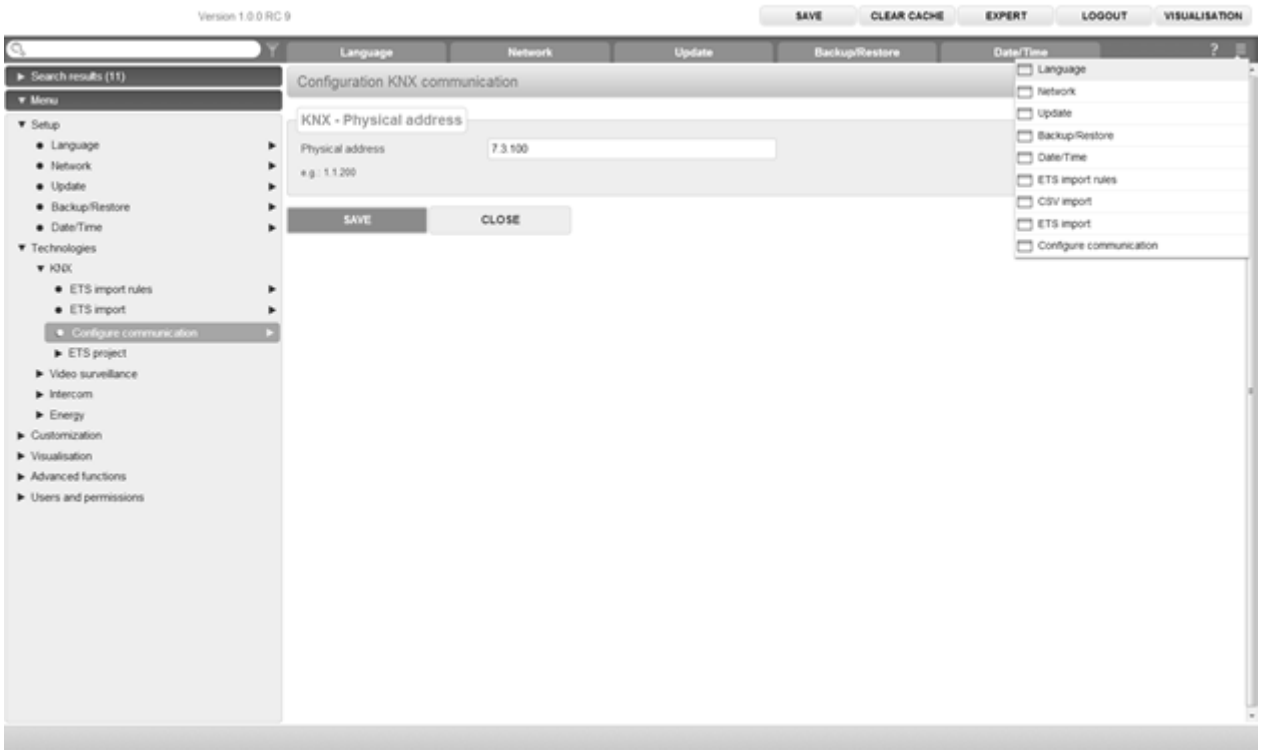
2.6 WORKSPACE

2.6.1 OVERVIEW

The WORKSPACE is the working surface of the ADMINISTRATION area. It offers the possibility to open several configuration windows at the same time in different tabs. The configuration window of a selected entry will be opened when the EDIT-action (either the 3 points of the selected entry or the EDIT button in the TOOLBAR) is executed.

2.6.2 USAGE OF THE TABS

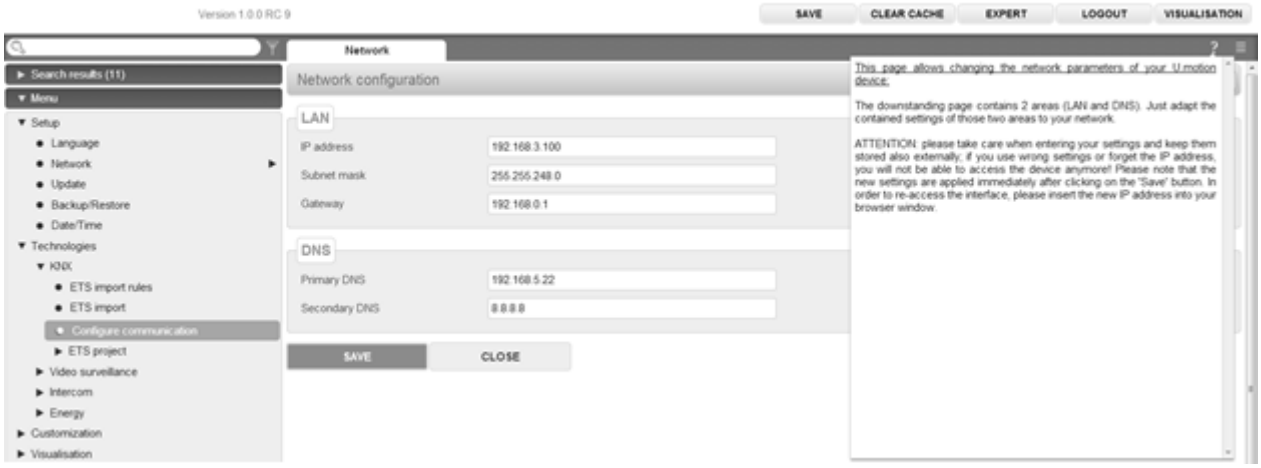
All opened tabs are displayed in the TAB-BAR of in the upper area of the WORKSPACE:



If a large number of tabs is opened, they are not all represented in the TAB-BAR. The hidden tabs can be accessed through the button at the right end of the TAB-BAR, which on click shows a complete list of all opened tabs. To close an opened tab, move the mouse pointer on the tab title and close the tab through the appearing X-icon. If there are present any unsaved changes in the tab, you will be informed about it before the tab is closed, in order to avoid data loss.

2.6.3 HELP

A click on the help button (?) opens a pop-up with information about the current WORKSPACE content:



When you switch into another tab, the help pop-up will be closed. For showing the help of the new tab, click the help button again.

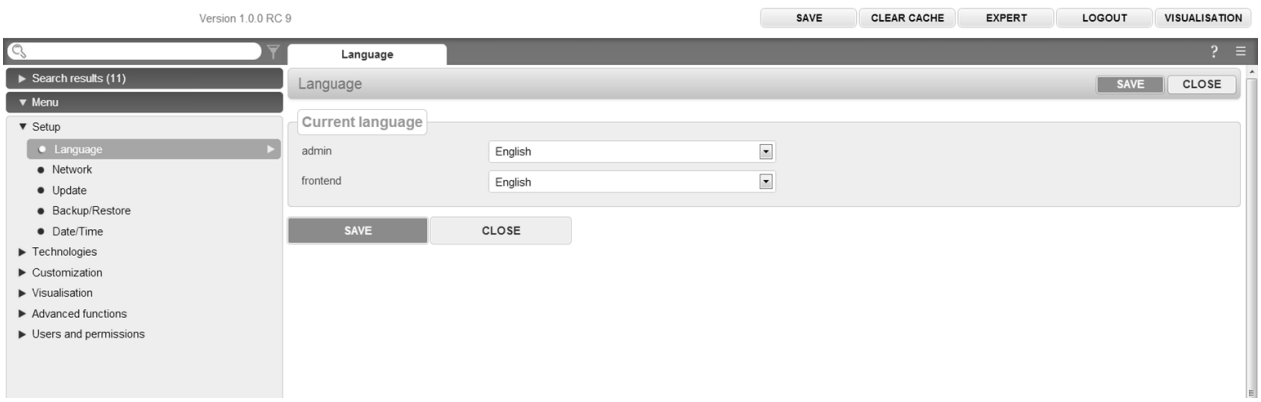
3 SETUP

3.1 INTRODUCTION

This chapter explains the configuration pages for installation, commissioning and maintenance of U.motion KNX Server. All sections and menus described in this chapter can be found in the SETUP section of the navigation menu. To have access to all of these settings, you must be logged in as administrator.

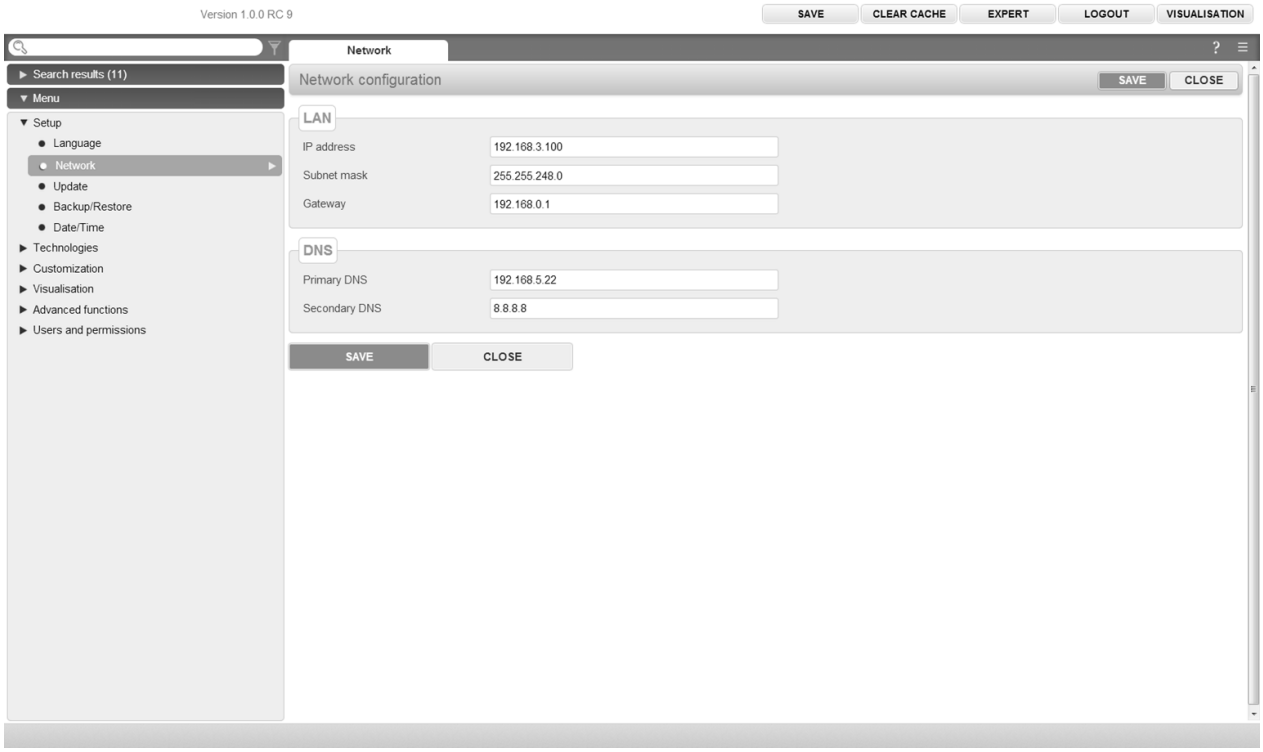
3.2 LANGUAGE

This page allows the configuration of the language that should be used for the different areas of U.motion KNX Server. Currently the language can be set separately for the ADMINISTRATION and VISUALISATION area. Select the desired language for the appropriate area and click on "SAVE". Once the storage procedure is completed, the page will be refreshed and displayed in the selected language.



3.3 NETWORK

This page allows the configuration of the network parameters of U.motion KNX Server:



The available parameters are:

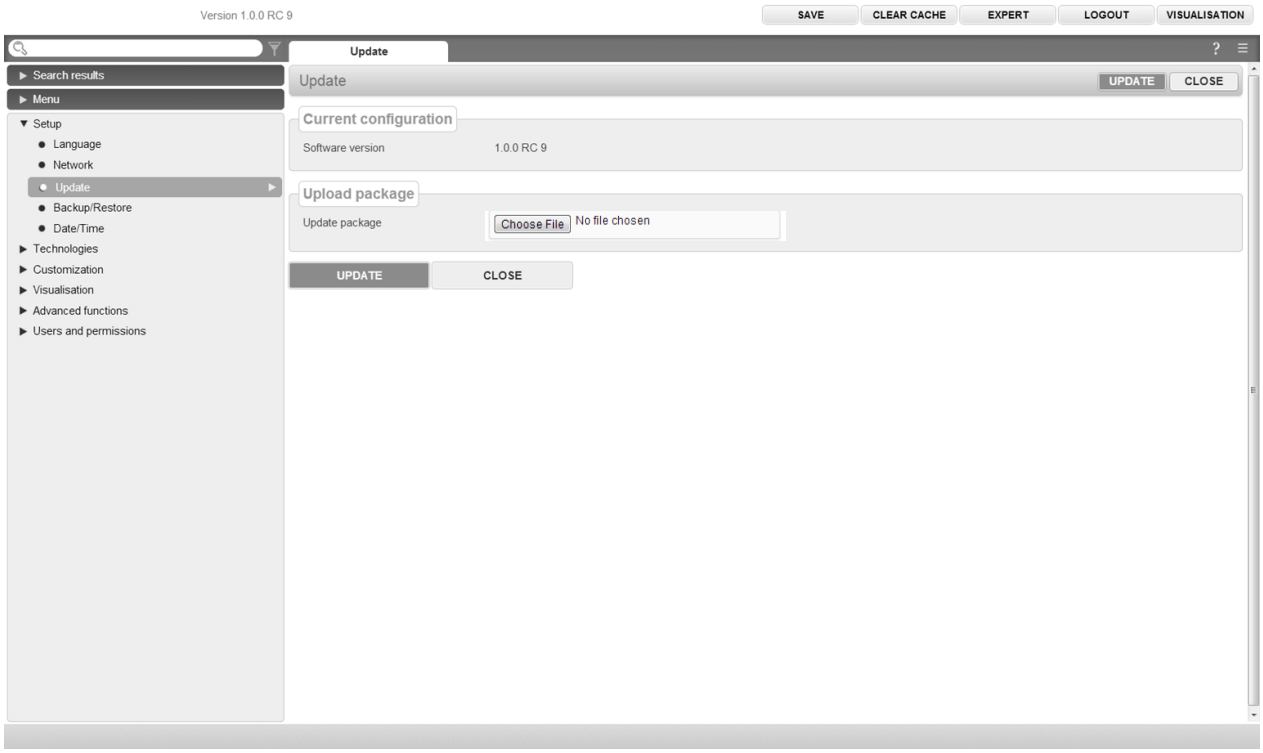
IP ADDRESS	IP address of U.motion KNX Server; this address must be present in the network only once and must be compatible with the IP addresses of the other devices inside the same network (if unsure, please contact your network administrator)
SUBNET MASK	If no special network configuration is used, don't change the standard value "255.255.255.0"
GATEWAY	Enter the IP address of your router (if present) or the referenced server of the network (if unsure, please contact your network administrator). NOTE: in order to guarantee remote access to U.motion KNX Server, you must enter the IP address of the Internet router, through which you want to access the web server. For more details, see the appropriate section of this manual.
PRIMARY DNS SECONDARY DNS	DNS addresses over which U.motion KNX Server can access the internet (if available). If no connection is possible with the default addresses, please contact your network administrator.

After modifying the single parameters, please click on "SAVE". If the IP address was changed, the new IP address must be entered in the address bar of the browser for reconnecting with the webserver. Please ensure that all entered data is correct before you save them. If incorrect settings are saved, U.motion KNX Server will probably be no longer accessible through the network.

3.4 UPDATE

This menu permits to update the software version of U.motion KNX Server; please use only official update packages published by the manufacturer**,** in order to avoid malfunctions. To update U.motion KNX Server, please proceed as follows:

- Save the update package (downloaded from homepage or received via mail) on your PC without unpacking[1] it
-
- Open the UPDATE menu in the ADMINISTRATION of U.motion KNX Server
- Choose the update package through the button “Choose file” (or similar, depends on the browser)
- Check if the update package includes a newer version of the software (current version is shown on top)
- Click on the button “UPDATE”



The update process runs completely automatically; please wait for feedback from the page without performing other tasks or exiting the browser (risk of data loss / web server malfunction). Depending on the configuration and software version, the update may take several minutes.

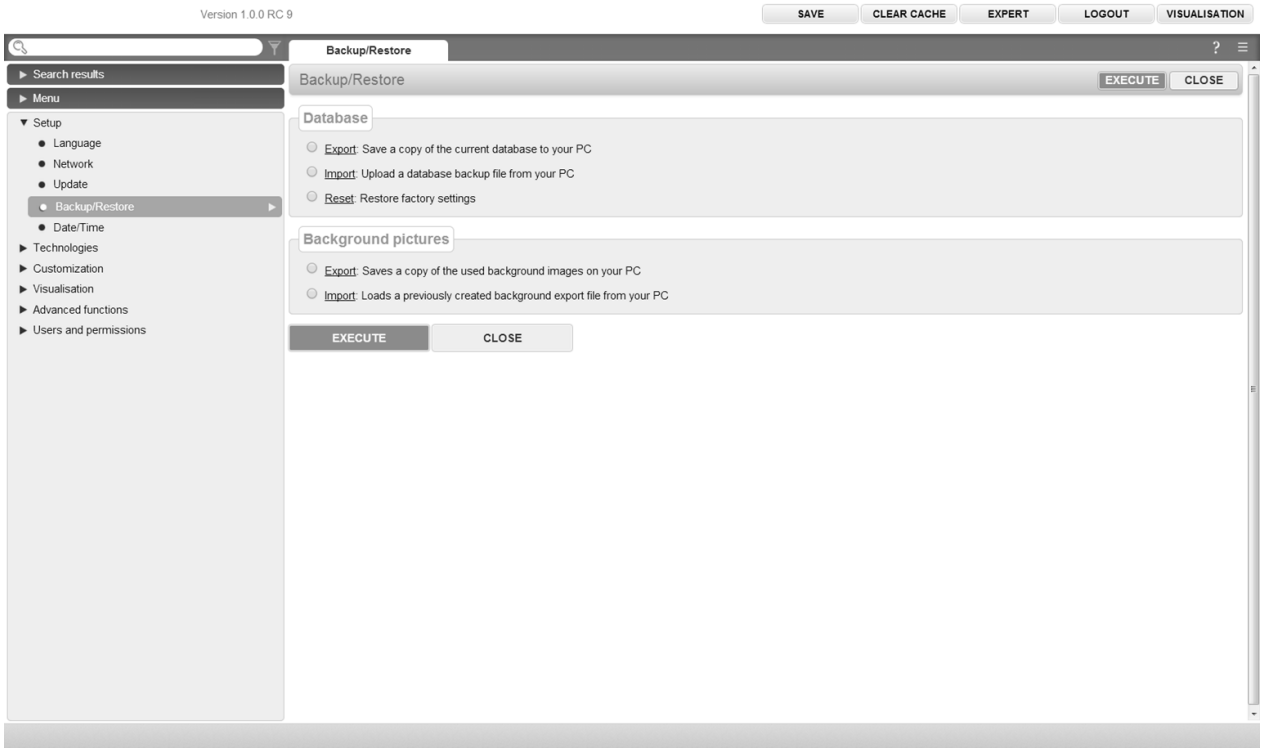
Once the update process is completed, a brief summary as well as the new software version is displayed. To complete the update, please click on the "Restart now" button, which will restart the operating system of U.motion KNX Server.

3.5 BACKUP/RESTORE

This page allows the creation of a backup of your project, or also the import of a previously created backup (even from another U.motion KNX Server or the U.motion Builder).

[1] HINT FOR MAC-USERS: if the update package is downloaded with SAFARI or the integrated mail client, it will be unpacked automatically, which prevents a successful update. In this case, please download the update package again using an alternative browser / email client.

In addition, U.motion KNX Server can be reset to factory settings (the IP address will NOT be affected by the reset).



After the desired action has been selected (and in case of the import action a suitable backup has been selected), click on "EXECUTE" and wait for the desired action to be processed. Neither cancel the started action nor close the browser window during this process.

3.6 Date/Time

This page allows setting several parameters related to date and time of U.motion KNX Server.

3.6.1 Date/Time Configuration

Permits to manually adjust the system time of the web server. If in the own ETS project at least an object of type date or time is available, U.motion KNX Server can be configured to send these values automatically on the bus to synchronize other devices with its date and time.

3.6.2 Timezone Settings

Allows configuring the time zone in which U.motion KNX Server is located.

3.6.3 Online Update

Allows defining a time server and a time interval to update automatically the system time; if no special settings are required, it is recommended to use the default settings.

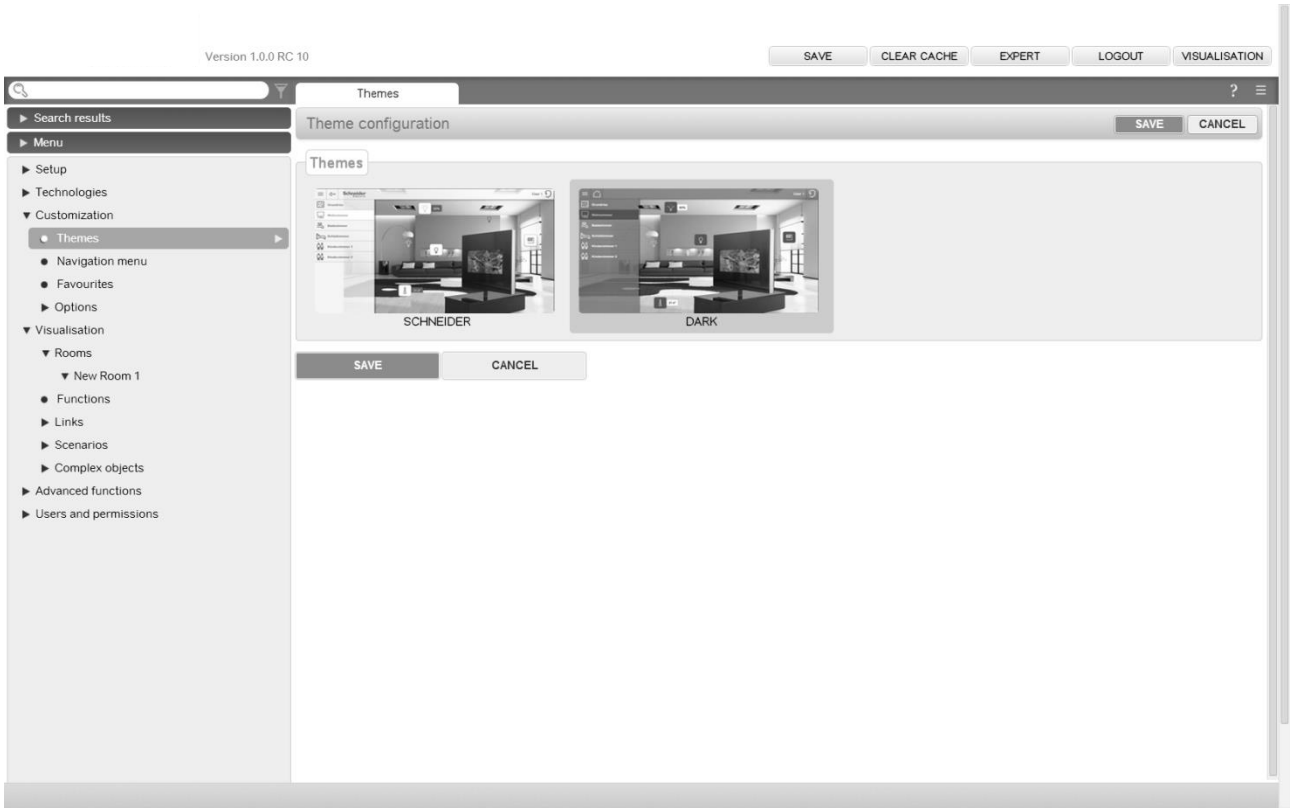
3.6.4 Scheduled Services Reboot

Provides an automatic restart of the services running on U.motion KNX Server in the background; week day and time for the automatic restart of the services can be configured here. Normally, the automatic restart of the services is not required, therefore it is recommended to not change the factory settings.

4 CUSTOMIZATION

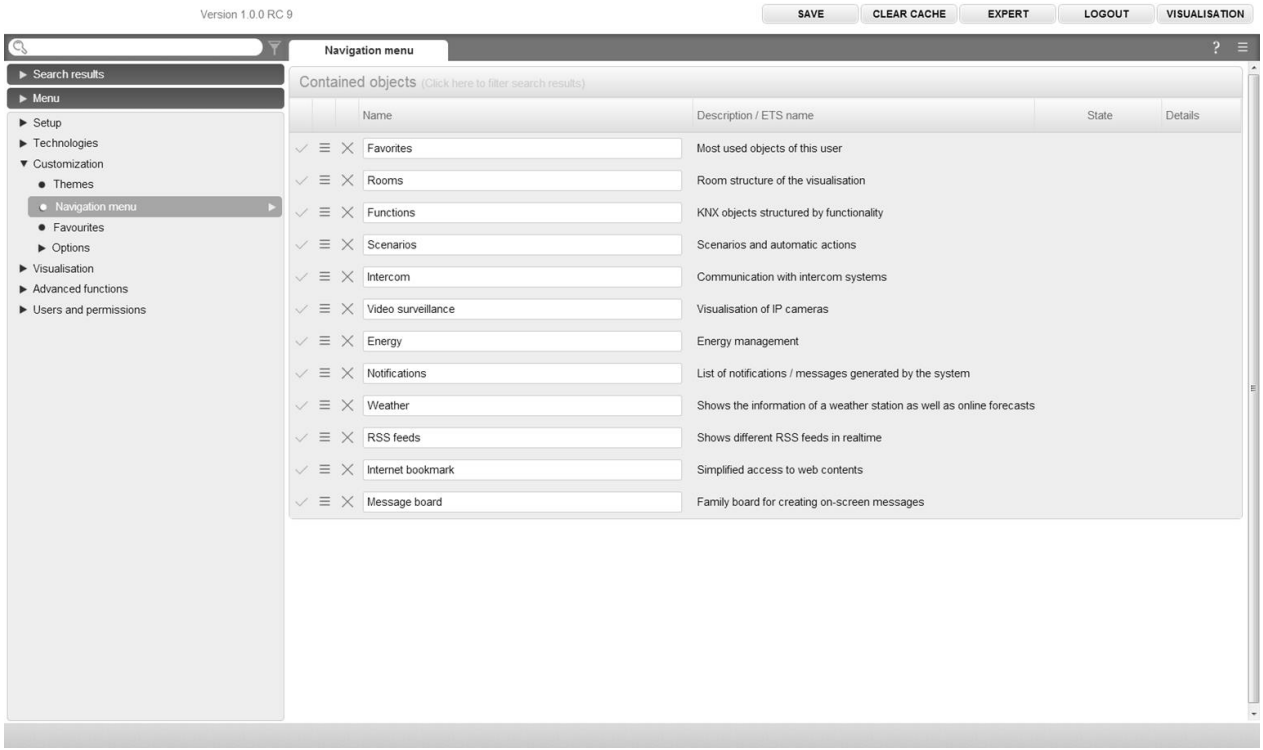
4.1 THEMES

U.motion KNX Server offers different themes for changing the design of the VISUALISATION; in this page one can choose which theme should be used for the VISUALISATION of U.motion KNX Server:



4.2 NAVIGATION MENU

This page permits to personalize the navigation menu. The individual links can be defined, as well as their order within the navigation menu itself. If the EXPERT mode is active, all personalization options of the navigation menu are accessible:



Through the option "VISIBLE" the individual menu items for the navigation menu can be activated or hidden; all hidden menu items are displayed semi-transparent and are not visible in the navigation menu. Menu items of the system itself can't be deleted, but only hidden.

To change the position of a menu item, it can be moved through "drag and drop" using the grey ORDER button, as already explained for other objects.

It's also possible to add rooms to the navigation menu so that they are directly accessible from the navigation menu and the HOME page. This can be done by searching the desired room with the search function and pulling them into the list ("drag and drop").

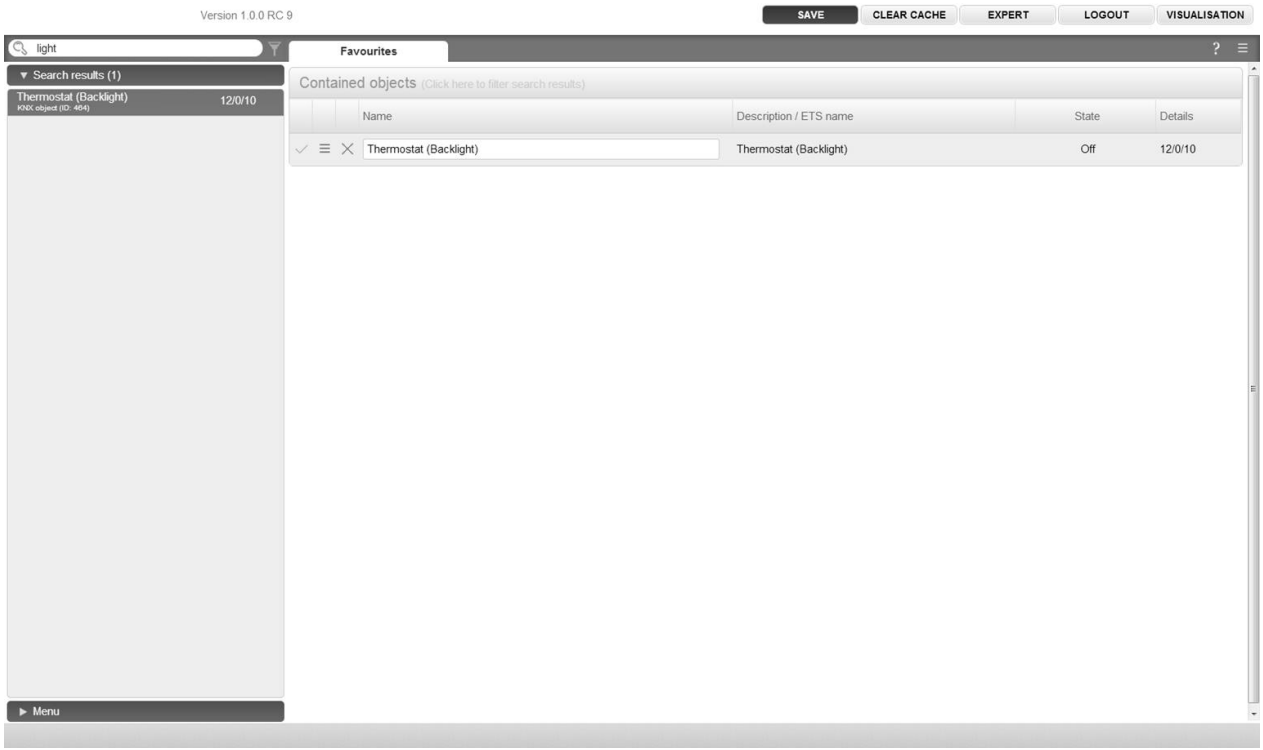
Once the visualisation is refreshed, the changes made in the navigation menu will be visible.

4.3 FAVOURITES

All objects that in the visualisation have been identified as "FAVOURITES" can be managed here. On delivery this list is empty. The end user can define various objects in the VISUALISATION as "FAVOURITES" on his own, which results that the defined objects will be automatically included in the list shown below. The "FAVOURITES" are reachable either through the navigation menu or through the HOME page.

In this configuration window the list with the favourites can be modified:

- Objects can be deleted from the list with the DELETE button
- The order of the single objects can be changed by dragging them (using the grey ORDER button) to the desired position in the list and dropping them there.
- New objects can be added by dragging them in directly from the search function



4.4 OPTIONS

In this configuration menu the basic customization of the VISUALISATION of U.motion KNX Server can be realized.

4.4.1 HOME

This menu allows the customization of the graphical interface of the HOME page. The HOME page may contain different information from the system, the local weather forecast and different information from the created visualisation; the background image is also customizable:

SHOW CURRENT TEMPERATURE	This option embeds the local outside temperature into the HOME page; the forecast information for the defined location are set in the menu "WEATHER"
SHOW WEATHER FORECAST	Enables/Disables the weather forecast for the next 2 days
USER WEATHER INFO AS BACKGROUND	Enables/Disables the adaption of the HOME page's background in dependency of the actual weather information.
BACKGROUND IMAGE (IF NOT WEATHER)	Alternatively to the already mentioned options, a static image can be defined as background image of the HOME page.
CLOSE NAVIGATION MENU AUTOMATICALLY	Enables/Disables the automatic closing of the navigation menu

4.4.2 MAIL

This section allows configuring all parameters required for sending mails through U.motion KNX Server:

SMTP SERVER	SMTP-Server for sending mails
USERNAME PASSWORD	Username for accessing the SMTP server Password for accessing the SMTP server
ACTIVATE AUTHORIZATION	Defines whether for the communication with the SMTP server a user authentication is required or not
FORWARDER (MAIL ADDRESS)	Mail address of the sender; will be shown in the sent mail as address from which the mail comes from
PORT	Port for the communication with the SMTP server
USE SSL PROTOCOL	Defines whether the SSL protocol shall be used for the communication with the SMTP server or not.

4.4.3 NOTIFICATIONS

This page permits to configure the behavior of U.motion KNX Server at incoming notifications, depending on their type / priority level. For each type you can define whether the notification central should automatically pop up or just an advice should be shown in the HOME screen / navigation menu.

At default settings, only at incoming ALARM notifications the notification central is automatically opened.

4.4.4 WEATHER

In this menu the location, for which the weather data should be displayed, can be defined. Simply specify the name of the location, province, region or zip code, as required by the used weather service (WORLD WEATHER ONLINE, www.worldweatheronline.com).

Hint: Please do not use commas to separate the data, since the weather service doesn't support that. Please use spaces to divide the single words / numbers.

The usage of the weather services requires a valid "Weather API ID", which can be obtained for free on the following web page:

http://free.worldweatheronline.com/register.aspx

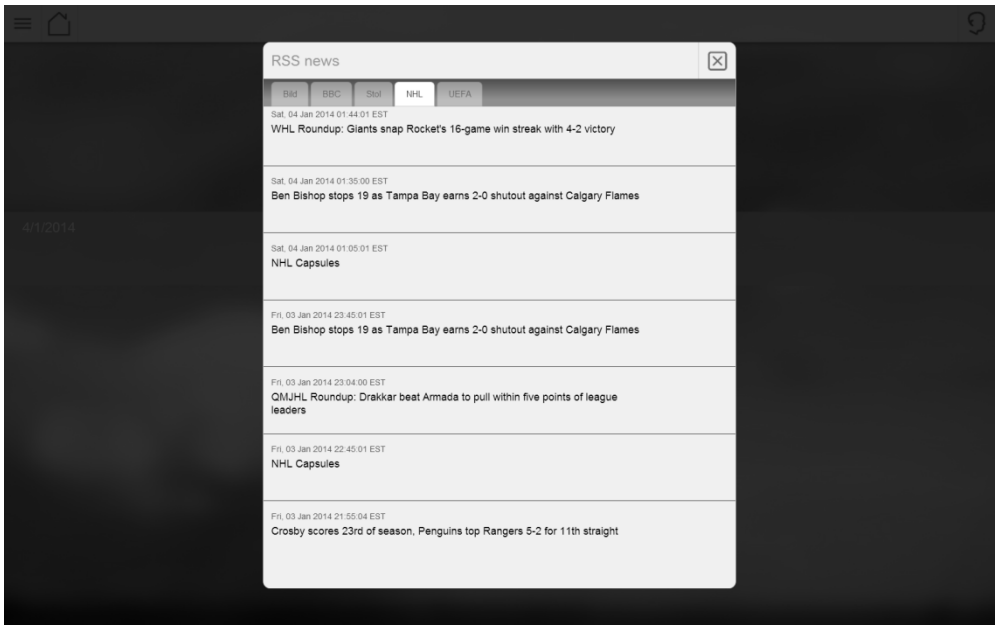
Without valid Weather API ID the weather services of U.motion KNX Server can't be used. In this case, please disable all kind of weather information / display within the HOME page, as described within the last chapters.

4.4.5 RSS FEEDS

Up to 5 RSS feeds can be integrated into the visualisation; through the appropriate link in the navigation menu, the page displaying the specified RSS feeds can be reached. For each feed a title and the appropriate URL can be specified:

Parameter	Value
Feed 1 - Title	BBC
Feed 1 - URL	http://feeds.bbci.co.uk/news/rss.xml
Feed 2 - Title	Sports
Feed 2 - URL	http://feeds.bbci.co.uk/sport/0/rss.xml?edition=uk

The following screenshot shows the result of a correct configuration of the RSS feeds:


RSS news
Bild
BBC
Stol
NHL
UEFA
Sat, 04 Jan 2014 01:44:01 EST
WHL Roundup: Giants snap Rocket's 16-game win streak with 4-2 victory
Sat, 04 Jan 2014 01:35:00 EST
Ben Bishop stops 19 as Tampa Bay earns 2-0 shutout against Calgary Flames
Sat, 04 Jan 2014 01:05:01 EST
NHL Capsules
Fri, 03 Jan 2014 23:45:01 EST
Ben Bishop stops 19 as Tampa Bay earns 2-0 shutout against Calgary Flames
Fri, 03 Jan 2014 23:04:00 EST
QMJHL Roundup: Drakkar beat Armada to pull within five points of league leaders
Fri, 03 Jan 2014 22:45:01 EST
NHL Capsules
Fri, 03 Jan 2014 21:55:04 EST
Crosby scores 23rd of season, Penguins top Rangers 5-2 for 11th straight

To get the appropriate feed URL check out the homepage of the provider of the feed. If the corresponding URL is not already listed, but only a link to the RSS feed is available, you can get the URL through the context menu (right-clicking on the link) by selecting the option "Copy address"; the link address will be copied to the clipboard and from there it can be easily pasted into the configuration of U.motion KNX Server.

Note: Not all RSS feeds are necessarily compatible with the XML encoding used by U.motion KNX Server and therefore may not be shown correctly.

4.4.6 INTERNET BOOKMARK

In this page a bookmark for the integrated browser function can be defined; this page will be shown when the internet bookmark function inside the VISUALISATION is accessed (through the navigation menu).

Hint: The web browser integrated inside the VISUALISATION area is not compatible with all web pages. All pages that use an automatic forwarding to other sites can't be handled properly. As the name of this functionality indicates correctly, it was designed to configure and open single internet bookmarks and not for complete navigation.

4.4.7 DISPLAY-INTERACTION

This page contains different options regarding the usage / interaction of the software on client devices. The following options are currently available:

ON-SCREEN-KEYBOARD (LOCAL & REMOTE)	Permits to enable – both locally (U.motion Builder, U.motion KNX Server) or remote via network – an on-screen-keyboard, through which it is possible to make text inputs within the software even on touch devices that don't have an own soft- or hardware keyboard.
CLEANING MODE (LOCAL & REMOTE)	Permits to enable – both locally (U.motion Builder, U.motion KNX Server) or remote via network – a special button within the TOOLBAR of the VISUALISATION; by clicking on this button, a cleaning page will be shown that blocks any interaction with the software for 30 seconds and therefore permits to clean the touch display avoiding the risk of unwanted clicks within the visualisation.

4.4.8 ADVANCED

This page contains the options for the Cache technologies, which are used on U.motion KNX Server. These caching technologies accelerate the navigation inside the VISUAISATION, because the needed data is loaded on the first access on the local storage of the used client. On every next access the data is already available in the local cache and the VISUALISATION can be used without any mentionable delays. Additional also the refresh rate for the status of the objects in the present inside the VISUALISATION can be set. The following options are here available:

Enable cache HTML client	Enables the first synchronization of HTML content in the browser (on the first access with a new browser window). This accelerates every next access even when the browser gets closed. HINT: The HTML client cache can be deleted on U.motion KNX Server by restarting the device.
Enable cache HTML server	Enables saving of often user pages on the U.motion KNX Server to accelerate future access from other devices (PC/mobile devices).
Enable DB client cache	Enables saving of different data in the browser cache during the navigation in the VISUALISATION to accelerate future navigation.

It is recommended to activate the cache technologies. If the cache technologies are enabled, the VISUALISATION reacts nearly in real-time. Only trained personal should change these setting.

5 KNX

5.1 INTRODUCTION

The following chapters will show in detail how U.motion KNX Server has to be configured in order to work in a KNX system. Prerequisite for creating the VISUALISATION on U.motion KNX Server is a KNX project that has been programmed either with ETS3 or ETS4. The focus of the subsequent chapters is initially on how the individual data points are imported and what options for these data points are available. The creation of the graphical interface of the VISUALISATION will be explained in chapter 6, "Rooms".

5.2 REQUIREMENTS AND EXPORT OF THE ETS PROJECT

U.motion KNX Server allows the import of KNX projects that have been realized with ETS3 or ETS4. U.motion KNX Server automatically takes over the structure and functionality of the single group addresses contained in the ETS project; the entire import process only takes a few minutes. To import a ETS project into U.motion KNX Server it is required that the project is available in a compatible format.

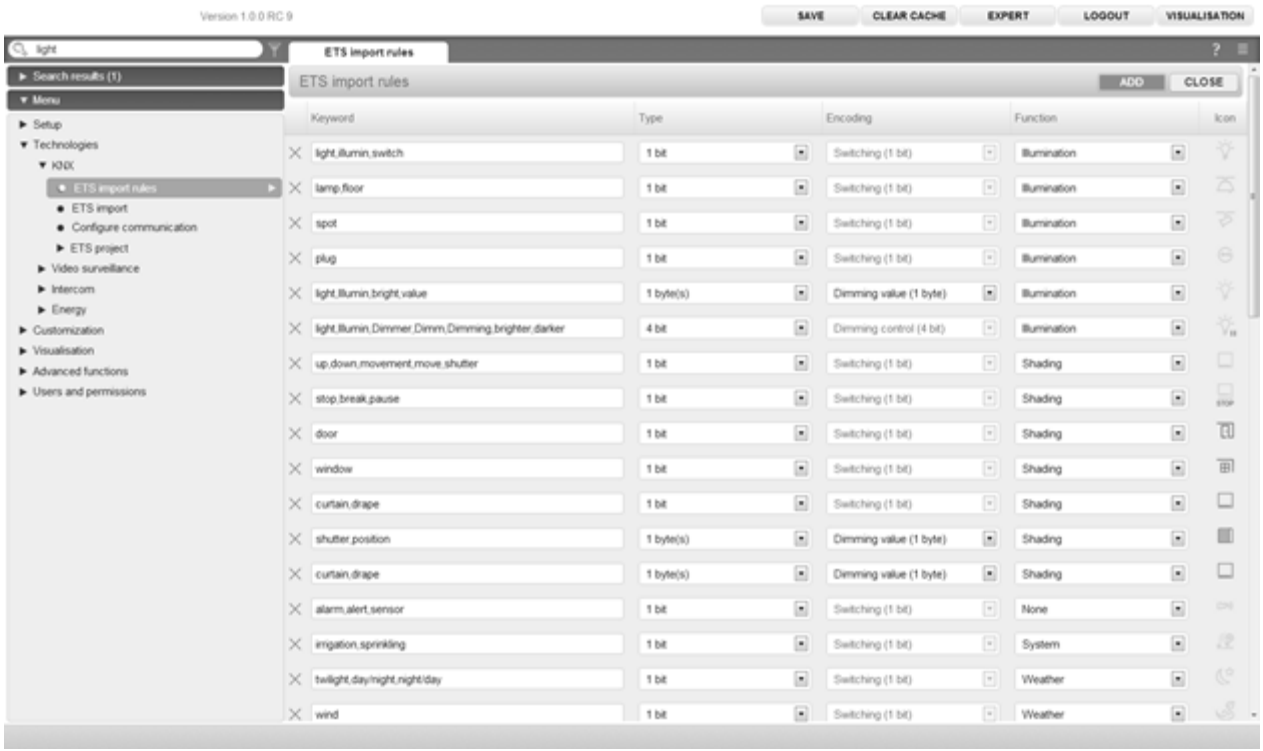
5.2.1 OPC-IMPORT

With the OPC export of ETS it is possible to create a compatible project file directly out of ETS. This file can be used to import the needed information of the ETS project into U.motion KNX Server.

- Open the ETS software
- Open the desired project, which should be imported into U.motion KNX Server
- Execute the OPC export to create a file with the ending *.esf (ETS3: “Data exchange” -> “Export to OPC-SERVER”; ETS4: “Extras” -> “OPC export”)

5.3 ETS IMPORT RULES

Before the KNX project is imported into U.motion KNX Server, you should just think about the usage of the ETS import rules. The administration of the ETS import rules can be found in the ADMINISTRATION of U.motion KNX Server under "TECHNOLOGIES" → "KNX":



The ETS-import rules automate the import process by assigning function and graphical appearance to the single data points depending on the configured criteria. The available criteria are data type (length), encoding and user-definable keywords which have to be included in the name of the group addresses for whom the corresponding ETS import rule should be applied. In U.motion KNX Server some ETS import rules, which apply to generically used data points, are already predefined; adjusting the ETS import rules is worthwhile, since it will make the personalization of a lot of data points after the import no more necessary.

Following parameters can be defined:

KEYWORD	One or more keywords, of which at least one must be present in the name of a group address of the imported KNX-project, so that the ETS import rule will be applied correctly. When multiple keywords are specified, they must be separated by a comma; blank spaces are recognized as part of the keyword!
TYPE	Length (in bit/byte) of the target group addresses in the KNX project
ENCODING	Encoding to be used by U.motion KNX Server in order to interpret the KNX bus data correctly; the available encodings depend on the data length defined in "TYPE"
FUNCTION	During the import process U.motion KNX Server, for each group address present in the KNX-project, creates a KNX object in its internal database. Each KNX object, created from a group address for which an ETS import rule was applied, will be automatically assigned to the here defined FUNCTION category during the import process
SYMBOL	Icon for showing the object graphically inside the VISUALISATION, assigned automatically by the defined ETS import rule

The ETS import rules are used by U.motion KNX Server as follows: during the import process, all group addresses within the import file are scanned and for each address a KNX object is created. If at least one of the keywords defined in an ETS import rule is found in the name of a KNX object, U.motion KNX Server checks whether the data length of this object matches the one defined in the ETS import rule ("TYPE"). If this second parameter matches, the ETS import rule is applied for this KNX object. For the matching KNX object the encoding defined in the ETS import rule will be applied automatically, furthermore it will be assigned to the FUNCTION category defined in the ETS import rule and also it will get the symbol specified in the rule. Any further editing of KNX objects, which have already been customized by an ETS import rule, is normally not needed, what can save a lot of time.

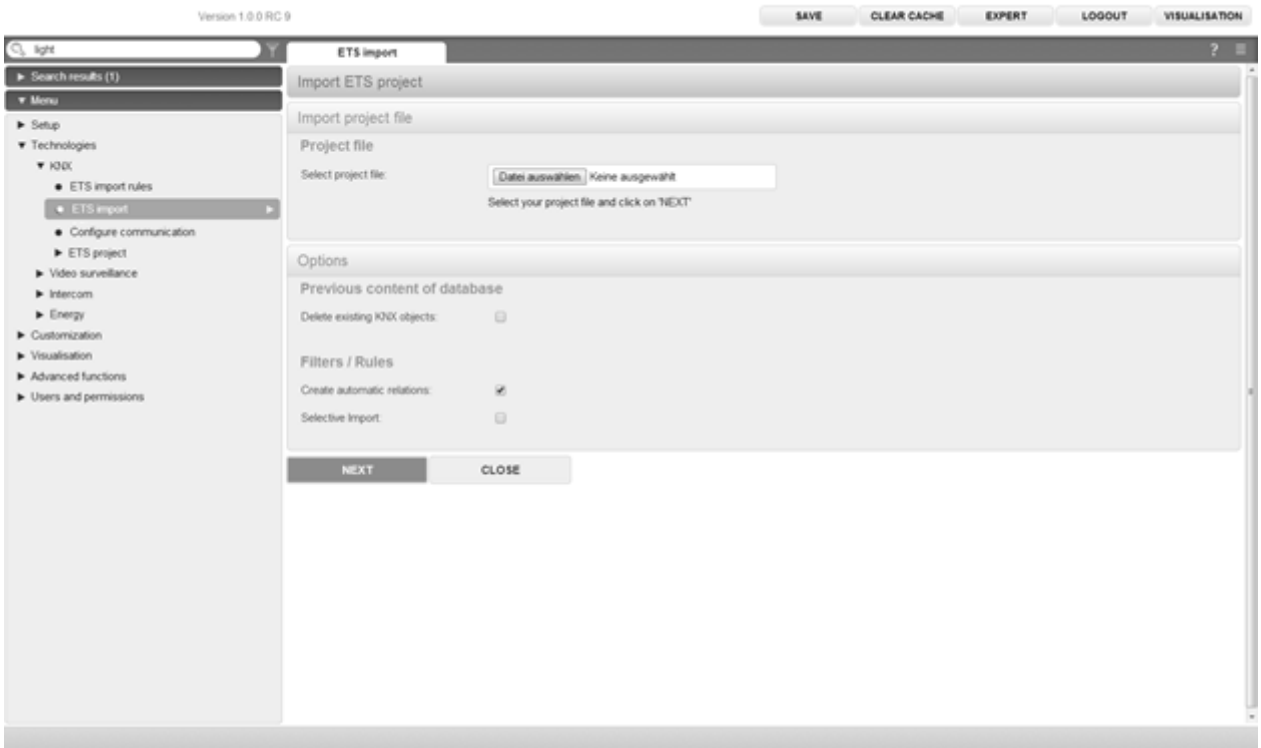
All KNX objects, which do not match at least one ETS import rule, must be edited manually during or after the import process, in order to assigning data length, encoding and the icon. Especially for large ETS projects with numerous group addresses it is recommended to make use of the ETS import rules, since the manual configuration of the single KNX objects can take a lot of time depending on the number of KNX objects.

The ETS import rules can be modified also during the import process, in the moment when those KNX objects are listed, which do not match with any ETS import rule.

5.4 ETS IMPORT

For being able to import an ETS project, it must be first created a compatible project file for U.motion KNX Server like described in 5.2. The import process for U.motion KNX Server is the following:

- Open the ADMINISTRATION menu
- Under “TECHNOLOGIES“ → “KNX“ choose “ETS IMPORT”
- Select (through the “BROWSE“ button) the project file you created
- Configure the import options as desired and click “NEXT” for starting the import procedure



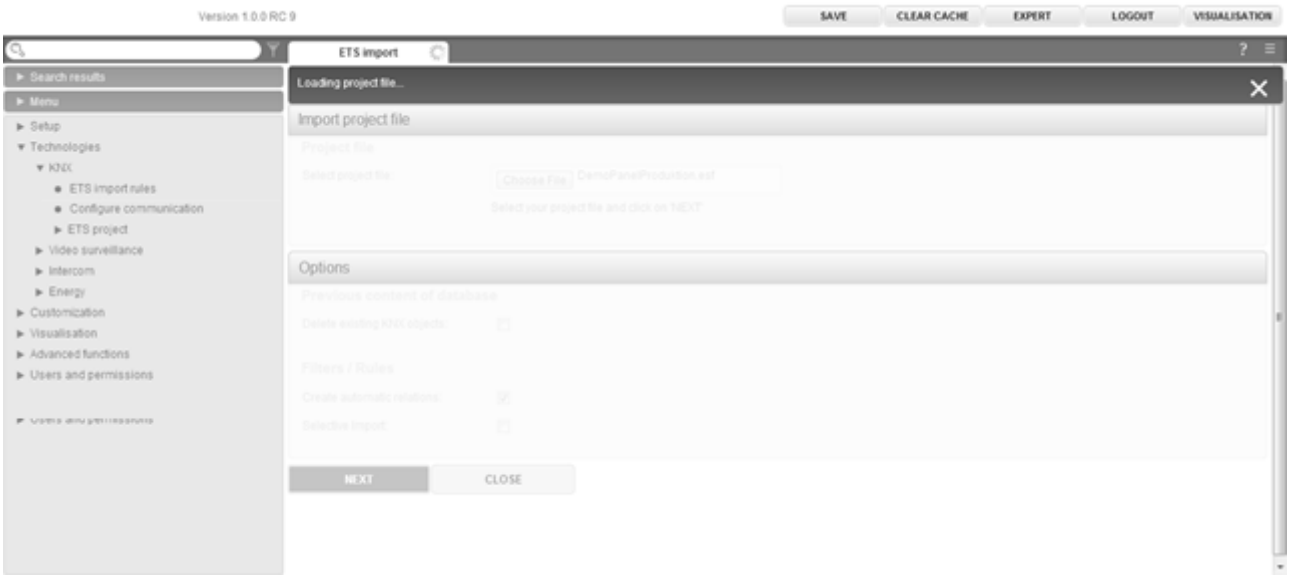
In BASE mode the following options are available:

DELETE EXISTING KNX-OBJECTS	If this option is enabled, all KNX objects present in the database will be deleted before the ETS-Import.
CREATE AUTOMATIC RELATIONS	This option enables / disables the automatic recognition of relations between individual group addresses in the ETS-project and the creation of the same relations in the U.motion KNX Server database, for example for updating statuses of individual objects across multiple group addresses (e.g. for central functions). Enabling this option usually results in a correctly functioning and always refreshed visualisation. If manual changes to the relations between KNX objects and group addresses have been performed in the U.motion KNX Server database, it is better to disable this option, otherwise all manual changes will be overwritten. More details about modifying relations between KNX objects and group addresses can be found in the following chapter.
SELECTIVE IMPORT	This option allows to select the single group addresses to import. Note: This option is enabled automatically when the ETS-project to be imported contains more group addresses than the license of U.motion KNX Server allows.

The EXPERT mode shows additional options for the ETS import:

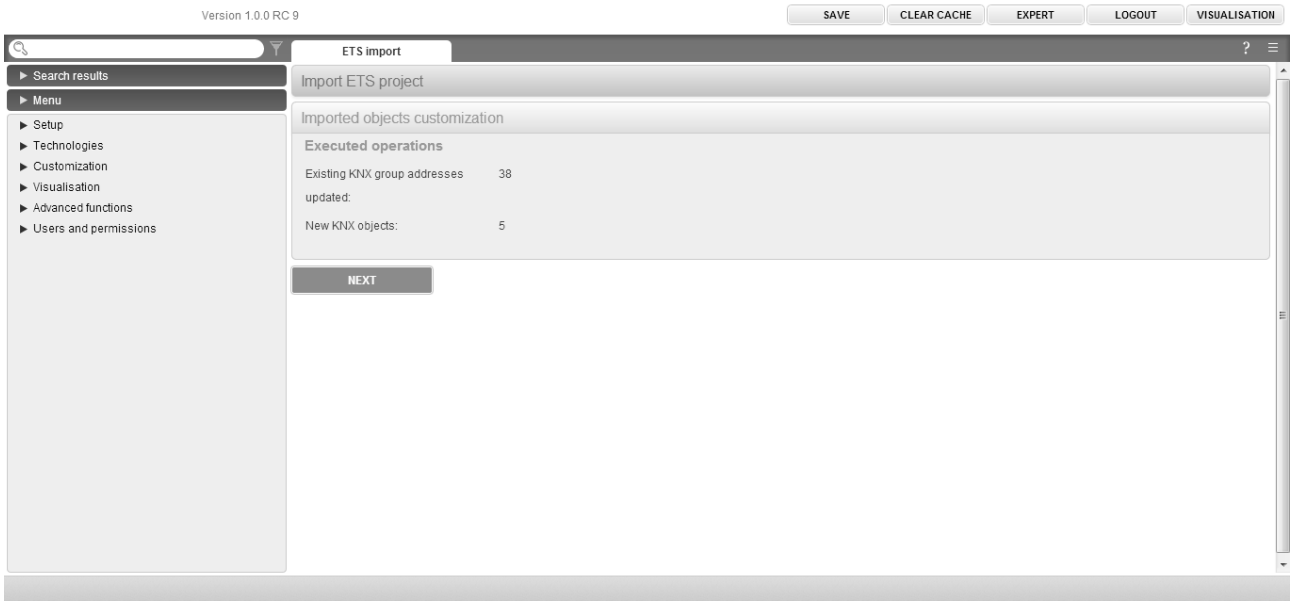
REMOVE NONEXISTING KNX OBJECTS	If this option is enabled, all previously imported KNX objects that aren't present in the new ETS project anymore will be deleted from the U.motion KNX Server database.
REFRESH NAMES REFRESH ETS FLAGS	If an existing U.motion KNX Server database is updated, two options define whether the names and the read/write flags of the KNX objects within this database should be adapted to the new names and flags from the ETS project or not. These options should not be enabled if there have been made changes on KNX objects in the U.motion KNX Server database, independently from ETS project
COMMUNICATION INTERFACE	The interface, through which U.motion KNX Server communicates with the imported KNX group addresses, can be selected here. If no special configurations in U.motion KNX Server have been made, only the integrated KNX interface is available.

By clicking "NEXT" the import process is started, which will last a few minutes depending of the size of the ETS project to import. U.motion KNX Server will automatically create the appropriate KNX objects which can be used to create the graphical visualisation. Once the import process is finished, a summary of all actions is shown:

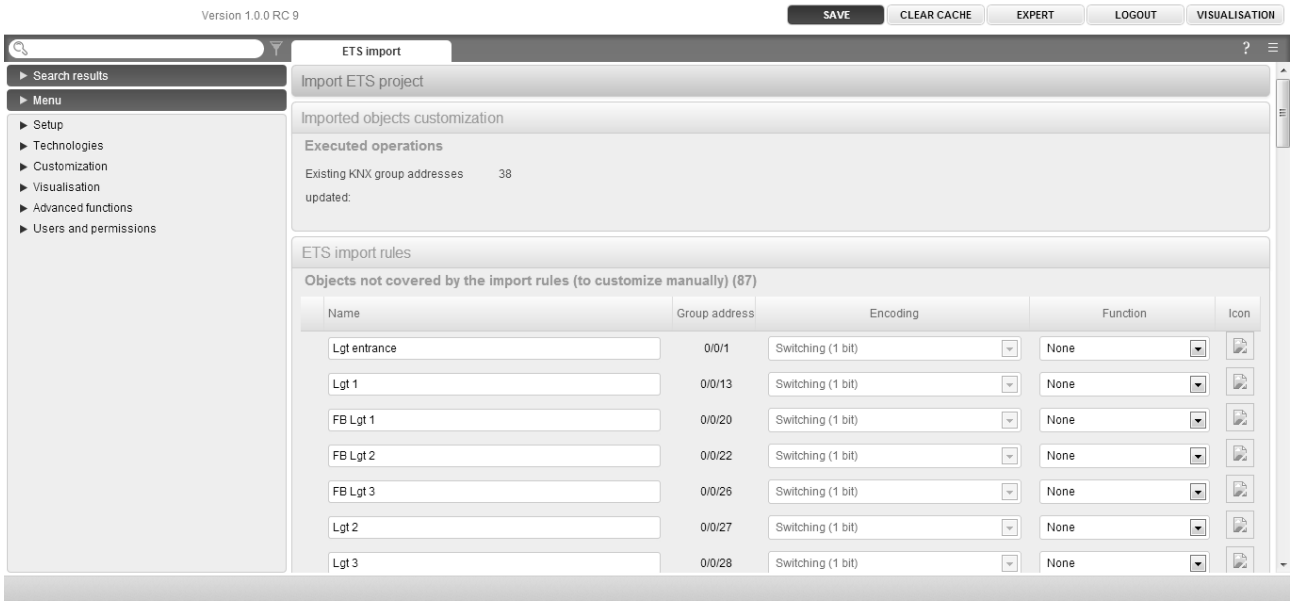


As soon as the project is imported, U.motion KNX Server checks if the single KNX objects are matching an ETS import rule. If for a KNX object at least one ETS import rule is matching, it will be applied; no additional configuration of these objects will be necessary.

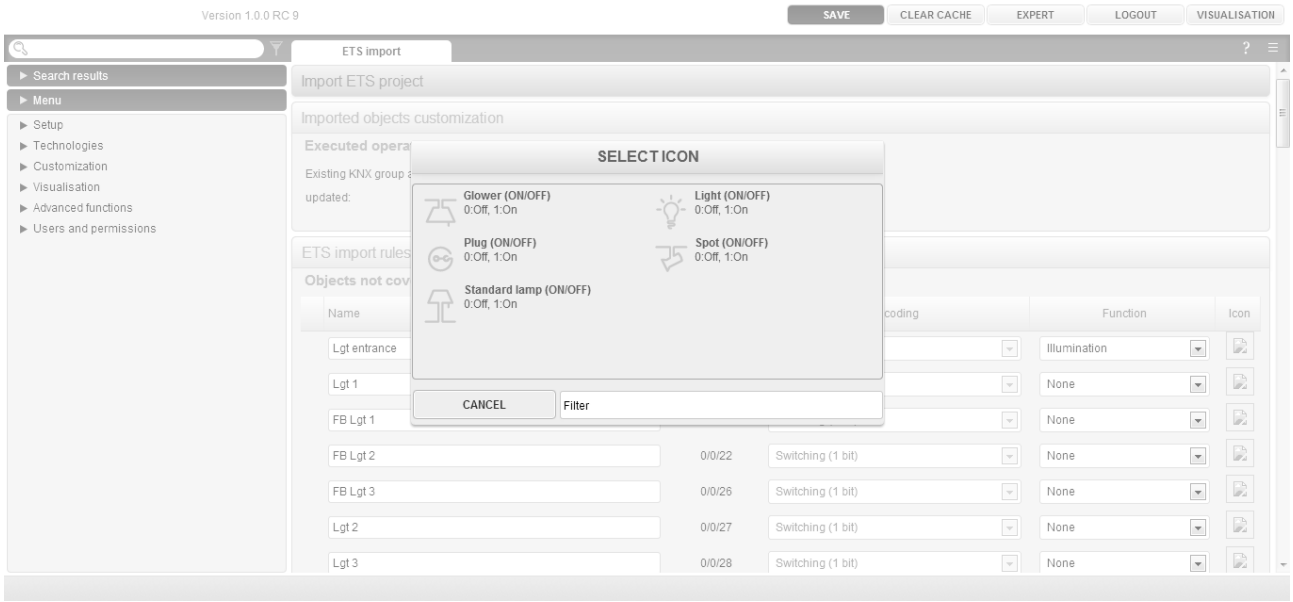
If all created KNX objects match at least one ETS import rule, after some seconds the section "ETS IMPORT RULES" will disappear and by clicking "NEXT" the import procedure can be completed (the communication service is restarted automatically, so that the web server can manage all the new created objects).



If some of the created KNX objects do not match any ETS import rule, they are all listed during the import process and can be personalized manually:



The available options are the same as you can define in the ETS import rules: encoding related to the settings inside the ETS project, function and icon (the shown icons depend on the selected encoding and function for the related object):



The selection of the icon during this phase can more be seen as the definition of the "graphical function" (a combination of icons, buttons, properties, ...), which is used in order to show the object correctly within the VISUALISATION. Further information regarding the graphical function can be found in chapter 14.1 of this manual.

At this stage it is also possible to modify the ETS import rules again. This is very useful if the list shows a lot of KNX objects that have similar keywords in their names and could use the same configuration settings. In this case the appropriate ETS import rule could be added in the following way:

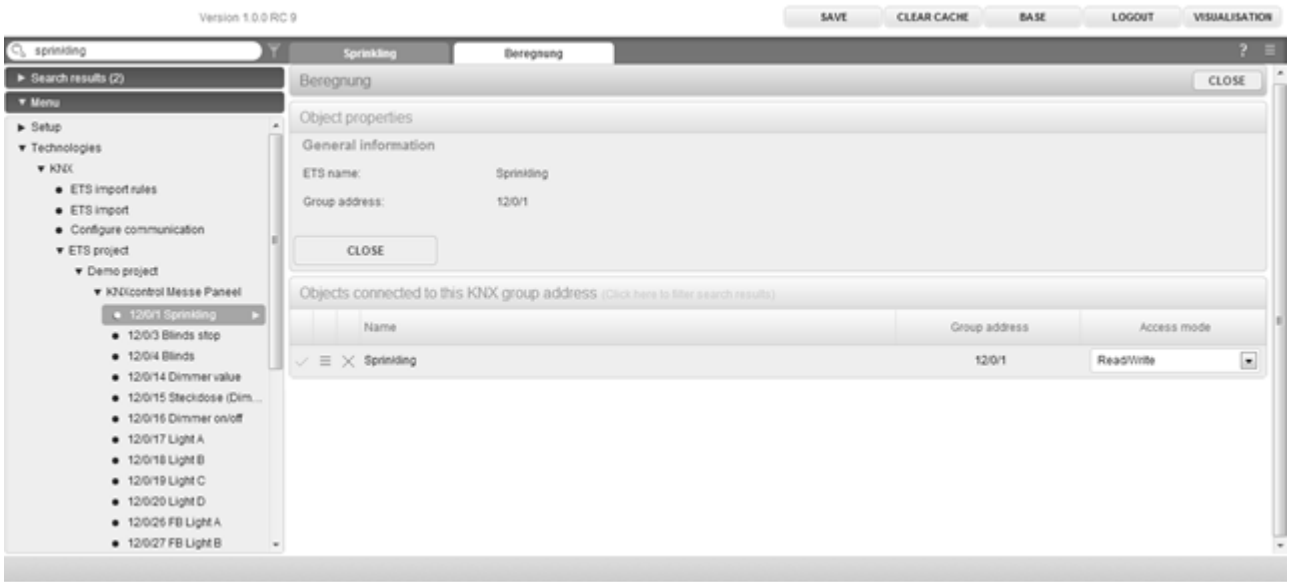
- By clicking “CUSTOMIZE RULES” the ETS import rules configuration menu is opened in a new tab
- Add new ETS import rules or modify already existing rules
- Afterwards change back to the tab containing the ETS import and click on “RELOAD RULES”
- Repeat this process again, if needed

Once all objects are customized as desired, please click on “NEXT” to complete the ETS import.

The software allows the termination of the ETS import process even without assigning a graphical symbol to the single KNX objects: nevertheless, this is not recommended, since such objects cannot be visualised correctly. However, it is also possible to edit the individual objects after the ETS import and therefore to assign them a graphical symbol in a second step.

Once the ETS import is completed, the single KNX objects are available under “TECHNOLOGIES“ → „KNX“ → „ETS-PROJECT“.

The tree structure of ETS is directly imported and can be very helpful to find single KNX objects and to edit them.



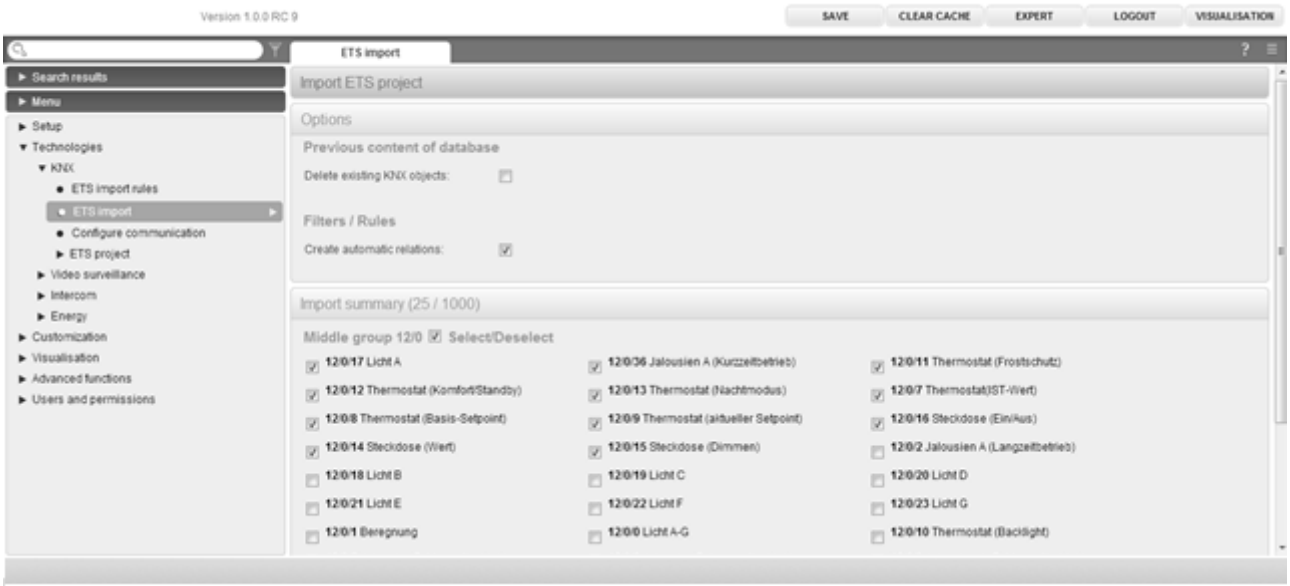
5.5 Selective Import of an ETS Project

It is possible to import only a part of the selected ETS project. In this case, you can select manually the group addresses that should be imported into U.motion KNX Server. This can be an advantage in certain cases:

- The project has already been imported in the past and now a version with new group addresses should be imported, without the risk of losing the changes made to the old group addresses
- Certain group addresses of the project should not be visible inside the visualisation
- The amount of group addresses present in the ETS project breaks the limit of the supported group addresses of the version of your U.motion KNX Server

In the last case, U.motion KNX Server will automatically enable the selective import; you will be able to import only the amount of group addresses supported by your version (is shown on top of the page).

The following screenshot shows an example of the selective import:

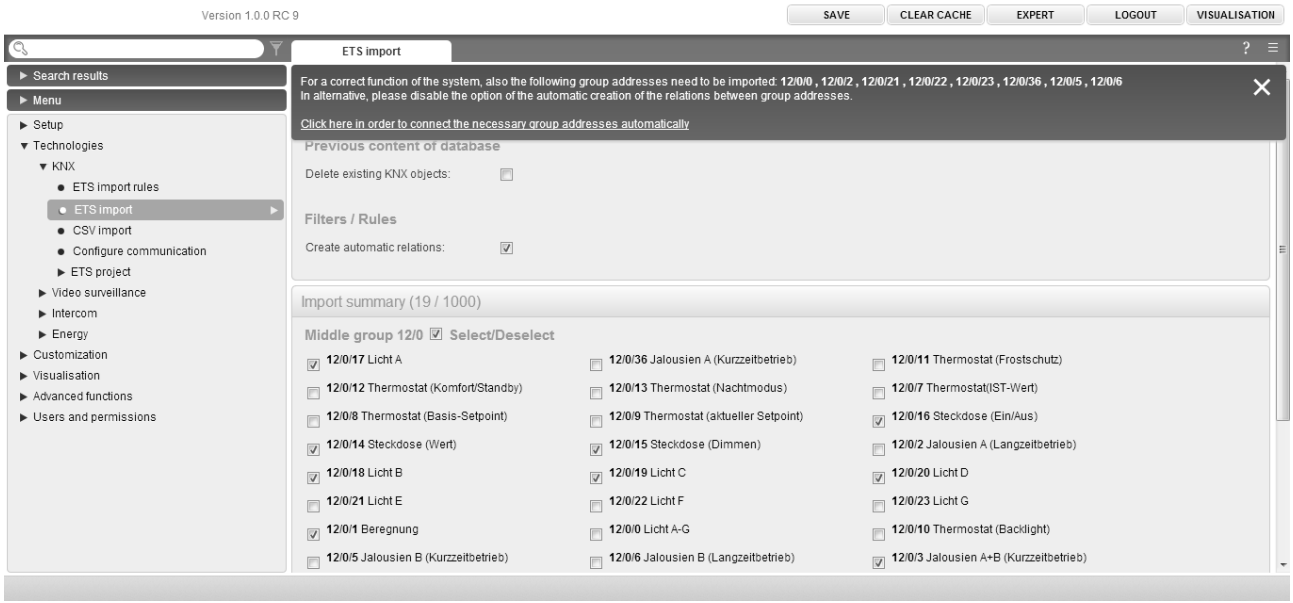


The group addresses present in the ETS project are sorted after middle groups and are shown in ascending order, together with their original ETS denomination. Through the checkboxes you are able to select / deselect single group addresses. Furthermore, you can select / deselect entire middle groups through the checkbox beneath their title.

When changing the selection of group addresses, the total amount of selected group addresses is refreshed and shown at the top of the page. If the amount surpasses the limit of the web server, the button for starting the import process will be locked.

After having selected the desired group addresses, the import can be started by clicking on “NEXT”. At conclusion of the import, the group addresses that have to be customized manually will be shown, as already explained more specifically in the last chapters.

It can happen that the selective import can’t be concluded because some of the selected group addresses have relations to other group addresses that haven’t been selected before (for example feedbacks, multiple relations of central functions etc.) . In this case, the following message will be shown:



Now you can select between the following actions:

- Automatic integration of the missing group addresses by clicking the link in the message box
- Manual selection of the related group addresses or deselection of group addresses that are causing the warning
- Activation of the EXPERT mode and removal of the option " CREATE AUTOMATIC RELATIONS"

If the missing group addresses are added, it's still possible that the message will appear again during the import, since also the newly added group addresses could have relations to other group addresses. In this case, just repeat the procedure as long as all relations are created correctly.

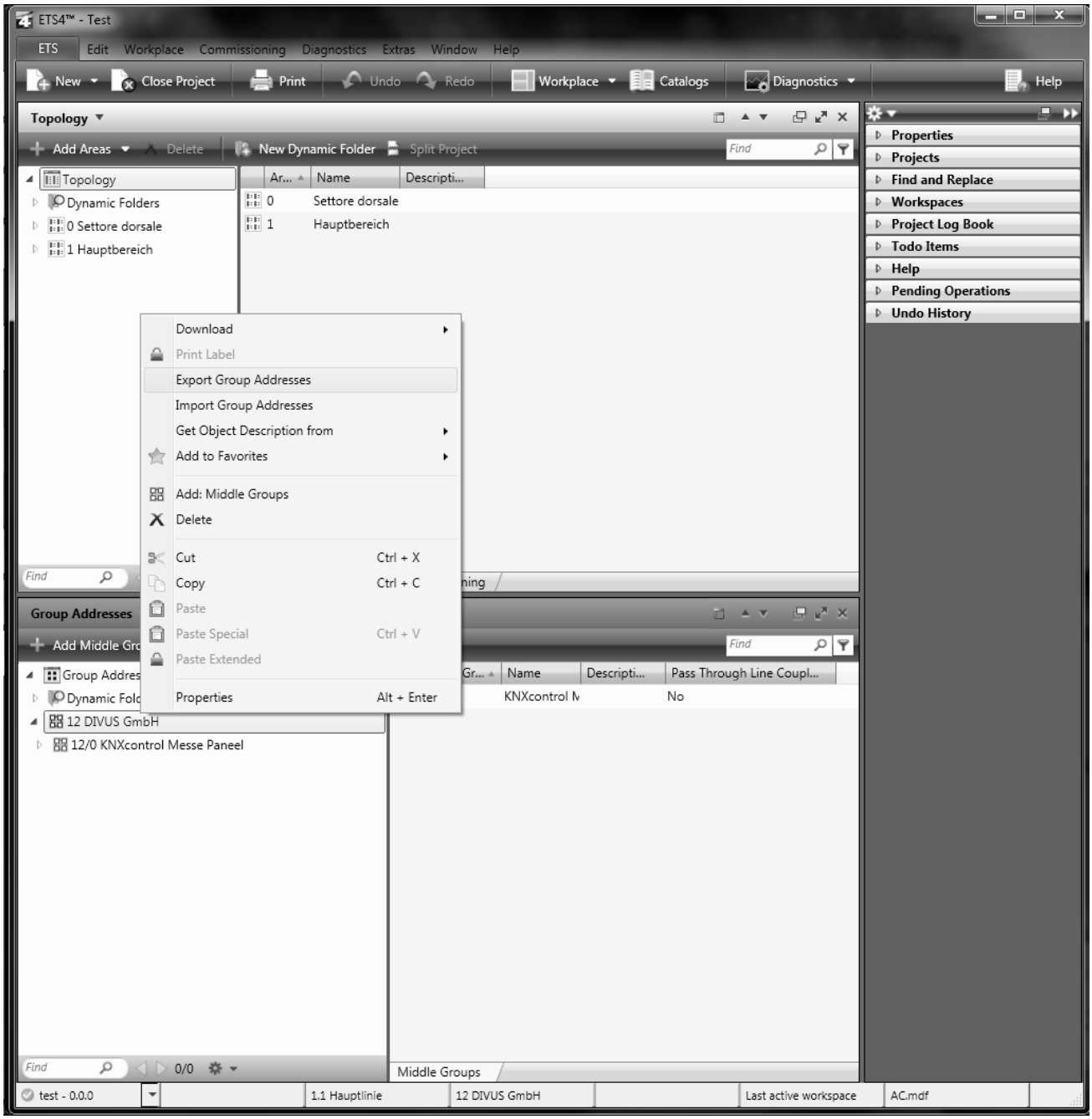
5.6 IMPORT OF A CSV FILE

U.motion KNX Server also supports the import of KNX group addresses through a CSV file; the file must show the following properties:

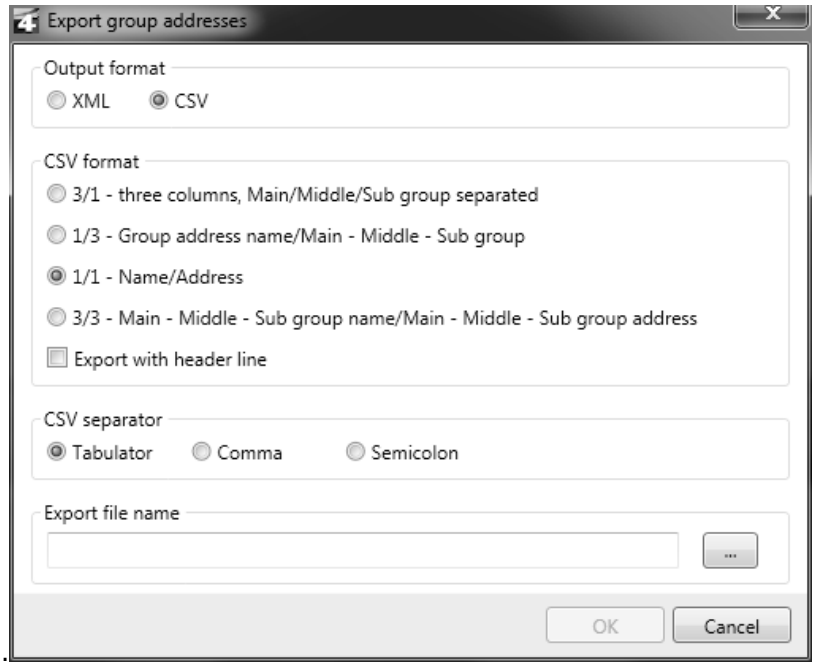
- Columns divided through tabulator
- Name of the group address in the first column
- Group address in the second column
- Bit length (optional) in the third column

This file can be created as well manually (for example using Microsoft Excel) as also exported directly from ETS. In the second case, please proceed as listed below:

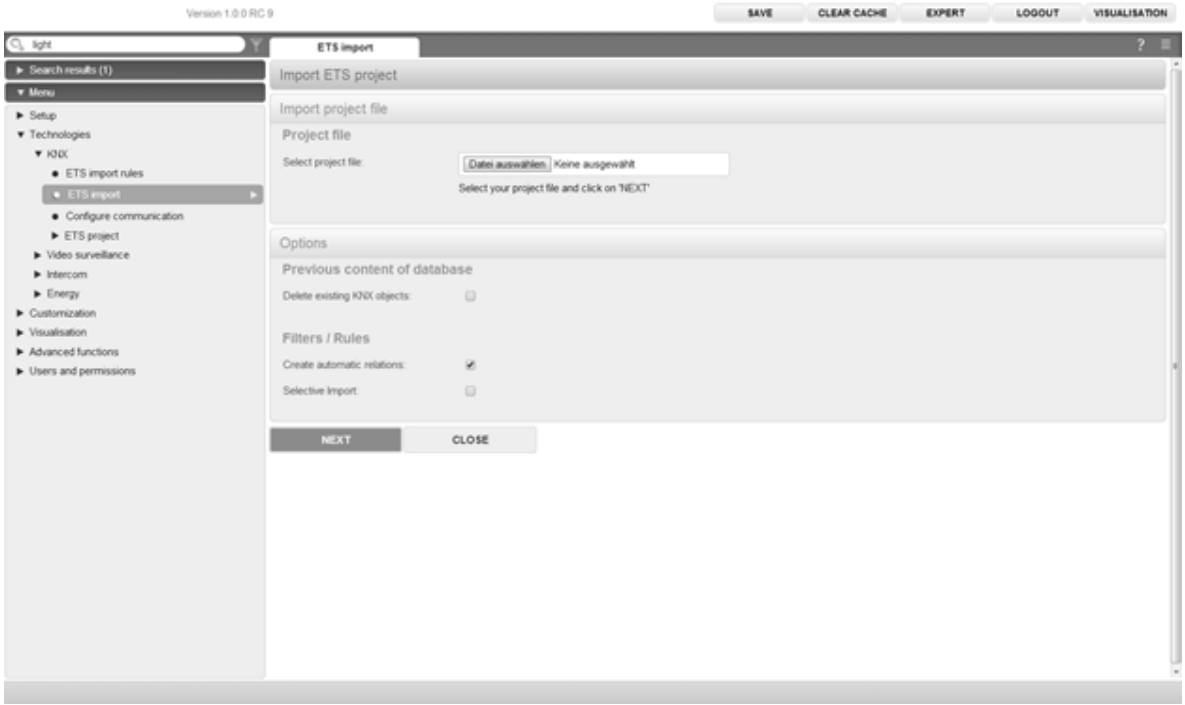
- Please select the group addresses that you want to export (by right-clicking on their middle or main group)
- Select the entry “Export Group Addresses” from the context menu:



- In the pop-up window please select “CSV” and set the following parameters (as shown in the screenshot on the next page):
  - As CSV format select 2 columns (1/1 – Name /Address)
  - As CSV separator select “Tabulator”



After the successful creation of the file, please select "ETS IMPORT" from the "KNX" section in the administration menu and load the file in the same way as described for the ETS import:



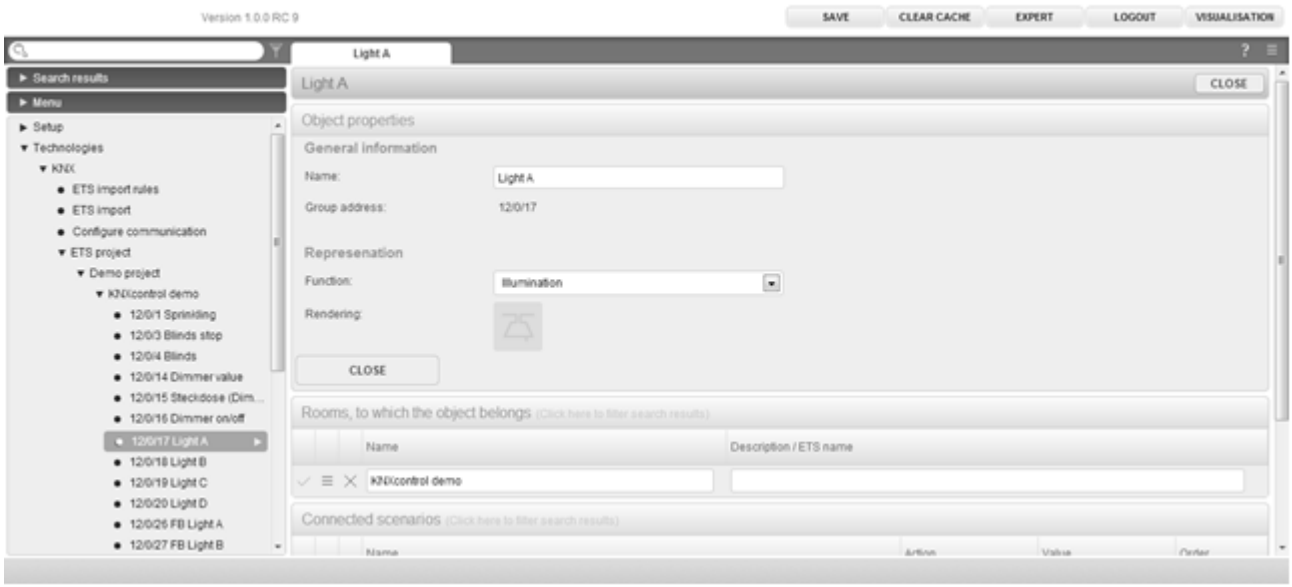
After starting the import procedure by clicking on the "NEXT" button, the objects are created automatically just as during the standard import procedure. Even in this case the matching import rules are applied and at the end the list of non-matching objects will be shown for manual configuration. As a difference to the classic ETS import, the bit length of the objects (if not specified in the third column of the CSV file) has to be set manually. This information is not added by the ETS export.

The CSV import can be useful above all when you want to create / import group addresses manually into U.motion KNX Server, without using ETS. In this case you will just have to create a CSV file with the corresponding name and group addresses and import it.

5.7 KNX OBJECT PROPERTIES

5.7.1 KNX OBJECT DETAILS

If a KNX object is selected in the navigation menu or through the search function and the EDIT button is clicked, the following screen will appear:



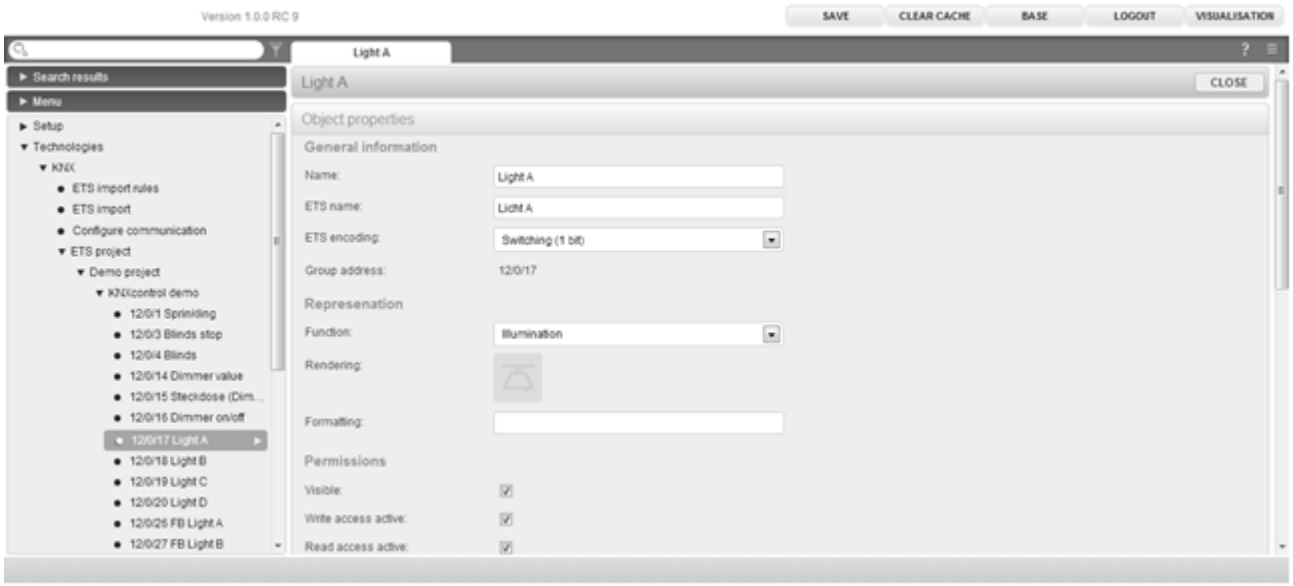
This page allows modifying all settings of the selected object and its relations to other objects present in the visualisation.

The first part of this configuration page contains all specific settings regarding the object itself. In BASE mode the following settings are accessible (as also shown in the screenshot):

NAME	Name of the object, which identifies it within the software. During the import process, the name of the corresponding group address from the ETS project is taken over; this setting can be changed here, if needed.
GROUP ADDRESS	Main group address used by the object for the communication with the KNX-bus; this setting can't be changed, but its value can be used as keyword for the search engine.
FUNCTION	Category to which the object belongs to; the selection here determines which icons are available in the next option. It is also possible to assign the object to no function, if the object should not be listed inside any FUNCTIONS page in the VISUALISATION.
ICON	In a popup window the icon can be selected, through which the object will be shown in the VISUALISATION. The available icons depend on the type of the KNX object and the function assigned to it. If "None" is defined as function, all icons matching the type of the KNX object will be available.

Enabling the EXPERT mode, the following additional options are available:

ETS NAME	Name of the related group address from the imported ETS project; this name can be used as keyword in the search engine to find the object.
ETS ENCODING	This setting determines which encoding U.motion KNX Server must use to communicate with the related group address via the KNX bus. **Note**: Changes to this setting should be considered carefully, since an encoding that does not match the settings of the related device can lead to incorrect behavior of the VISUALISATION.
FORMATTING	This option allows you to personalize the display format of an objects value. The syntax is "**%**{**X.Y**}{**Type**} {**Unit**}": • %: Indicator for the beginning of a formatting syntax ▪ X.Y: Digits before the decimal point (X) and after the decimal point (Y) • TYPE: Defines the output format to use for the value to be displayed: - b: Binary format - c: Character (numerical value required) - d: Decimal number - e/E: Scientific floating point format - f: Floating point format - s: String - x/X: Hexadecimal format ▪ UNIT: Separated by a space from the rest of the formatting here can be specified which measure unit should be appended to the formatted value. In this way it is possible to personalize the default measure unit of an object. For example the formatting "%0.2f kW" would display the value "143.58674" inside the visualisation in the following format: 143.53 kW. By using the formatting "%d kW" the same value would be displayed inside the visualisation in the following format: 143 kW. **Hint**: This formatting affects only objects whose value is represented in textual form (numbers, strings), not objects which are only represented through icons inside the visualisation.
VISIBLE	Defines if the object shall be visible inside the VISUALISATION or not.
WRITE ACCESS ACTIVE	Enables the operation of the object in the VISUALISATION through the defined graphical icon; this setting is normally configured automatically during the ETS import. If an object should be used only as a status display in the VISUALISATION, even if in the ETS project it was basically configured with write permissions, it is sufficient to disable the write access here. **Note**: To enable write access for objects, which were initially imported as read-only, the corresponding group address with write access must be configured, too (detailed information can be found ahead in this manual); improper settings can compromise the proper function of the system
READ ACCESS ACTIVE	Permits to read the current status of the object over the KNX bus; this flag is always active.



5.7.2 KNX GROUP ADDRESSES

This section is only visible in the EXPERT mode and allows the handling of the group addresses that are associated to an object. Depending on how the imported ETS project is structured, not only the main group address, from which the object was created during the ETS import, but also additional group addresses can be found here, whose can update the state of the object in the VISUALISATION (state feedback, central functions, etc.) .

For each linked group address various communication options can be set: "Read only", "Write only" and "Read / Write"; before this communication options are changed, please make sure that in the ETS project the needed permissions for a correct functionality are configured.

U.motion KNX Server can send active commands to only one of the listed group addresses. It is very important to ensure that only one of the linked group addresses has write permissions.

KNX group addresses, which shall refresh the status of a KNX object, can also be added after the ETS import (if not already done automatically by the import procedure:

- Activate the filter for the KNX group addresses
- Search the desired KNX group addresses with the search function
- Select the desired KNX group addresses from the search results list.
- Then drag the selected group address into the list of linked group addresses of the object and drop it there.
- Define permissions (normally “Read only” when the added group address is mentioned for refreshing the status of the object)
- Disable the search filter

The order of the linked KNX group address is extremely important. Only the first group address is used to create the graphical information related to the object. It must therefore be ensured that the main group address, from which the object has been created during the ETS import, is at the first place in the list. If this is not the case, the order of the linked group addresses can be changed by dragging the single group addresses with the MOVE-button to the desired position.

5.7.3 ROOMS AND CONNECTED SCENARIOS

The section "ROOMS, TO WHICH THE OBJECT BELONGS" includes all rooms of the software, in which the object is visible and accessible through the VISUALISATION. An object can exist in several rooms, but also in none; after the first ETS import an object belongs to no room, since the single rooms have to be created before an object can be assigned to them.

If some rooms are already configured, the object can be assigned to a room by searching the desired room through the search function and pull it into the list "ROOMS, TO WHICH THE OBJECT BELONGS" of the object ("drag and drop"). The other way around, it is also possible to use the configuration page of a room to add the individual KNX objects; more information about configuring the VISUALISATION by adding objects to the single rooms can be found in the appropriate chapter of this manual.

The list "LINKED SCENARIOS" shows all the created scenarios that contain the current object; more information about the scenarios can be found in the corresponding chapter of this manual.

5.7.4 ACTIVE AND PASSIVE EVENTS

The last two sections of the KNX objects configuration page allow the creation of events, which can offer the following actions:

- Change status of the current object in dependency of another object status (PASSIVE)
- Change status of another object in dependency of the current object status (ACTIVE)

To create a passive or active event the following steps are necessary:

- Search for the objects that should interact with the current object
- Drag the desired objects into the corresponding area (“ACTIVE EVENTS” or “PASSIVE EVENTS“) and drop them there

For each created event, the following settings are available:

CONDITION	Determines the state of the object for which the event should be triggered; depending on the type of the object different statuses are available. The selection "Every status change" means that the event will be triggered at any status change of the reference object.
ACTION	Depending on the type of the object, different actions can be selected. If a KNX object is selected normally you can only choose between "Write" (write a command on the KNX bus) or "Read" (send a status request to the KNX bus); for more information about the possible actions with other objects consult the appropriate chapters of this manual.
VALUE	If the target object supports it, you can set the value the target object should be set whenever the event is triggered; the available values depend on the type of the target object. It is also possible to set the target object to the same value as the triggering object ("Value of ...") or its inverted value ("Inverted value of ...").

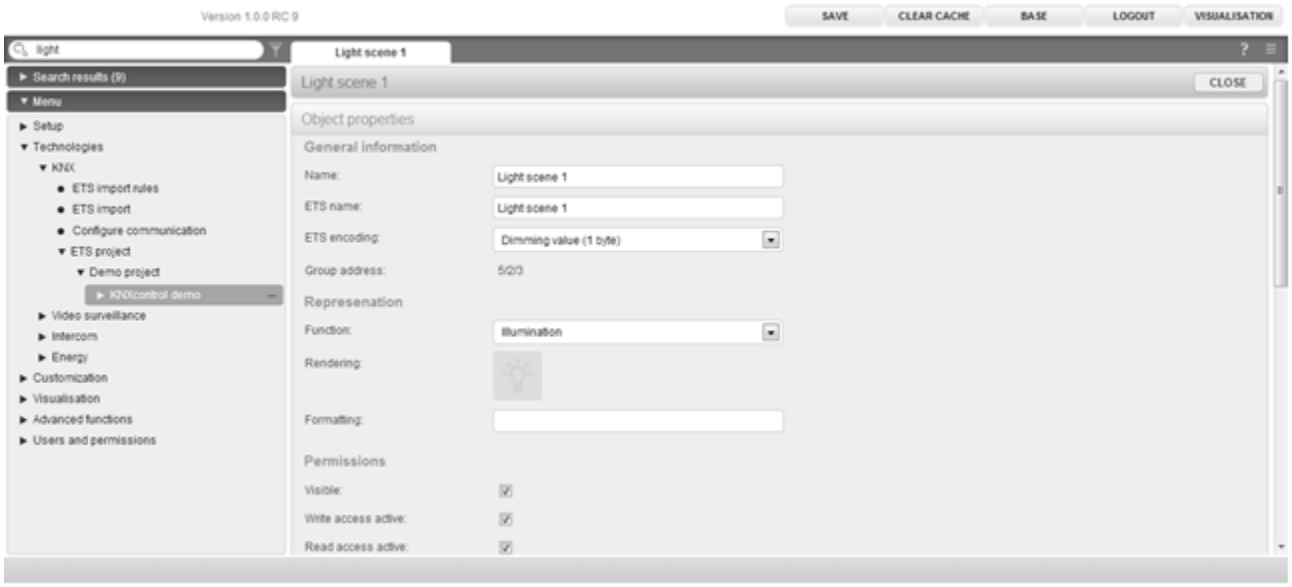
When you create an active event, the object that you are currently working on will be the object that triggers the event. If you instead create a passive event, the object that is added to the appropriate area will be the one triggering the event.

5.8 KNX SCENARIOS

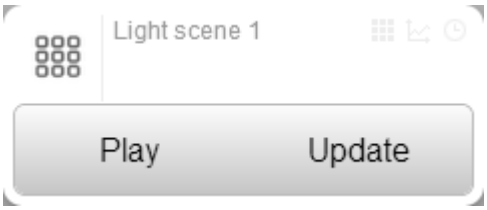
Objects of type 1 byte during the ETS import can be defined as KNX scenarios. With these objects no status feedbacks or single commands are transferred, but a number, usually between 1 and 64, which tells the installed devices the KNX scene they should load from their memory; all states saved for the loaded scene will be set from the device. Some KNX devices can save various states for such a KNX scenario. Depending from the value they receive on the group address of the scenario, they can launch different actions and set different states of functions.

A KNX object can be defined as KNX scenario as follows:

- Open the ADMINISTRATION menu and open the desired object (1byte) in a new tab
- Activate the EXPERT mode
- Ensure, that the "ETS ENCODING" is set to "Scaling - 0-100% (1byte)"
- Configure the parameter FUNCTION" to "SCENARIOS". If this entry should not be available, change the "ETS ENCODING" to another value and then back to "Scaling - 0-100% (1byte)".
- Select an appropriate icon
- Set the value for the scenario to send on the bus when it is activated in the input field "VALUE KNX SCENARIO"



Once a KNX scenario is configured it will appear in the VISUALISATION as shown below:



By clicking the PLAY button, the value configured for the parameter "VALUE KNX SCENARIO" will be sent to the KNX bus and the KNX devices configured for the usage of the KNX scenario will start the actions memorized for the received value. By clicking on "UPDATE", all status of the involved KNX objects are stored to the KNX devices. This way you got the same possibilities inside the VISUALISATION as present in the KNX-Installation for a KNX scenario (also called "light-scene"): start a scenario or update a scenario.

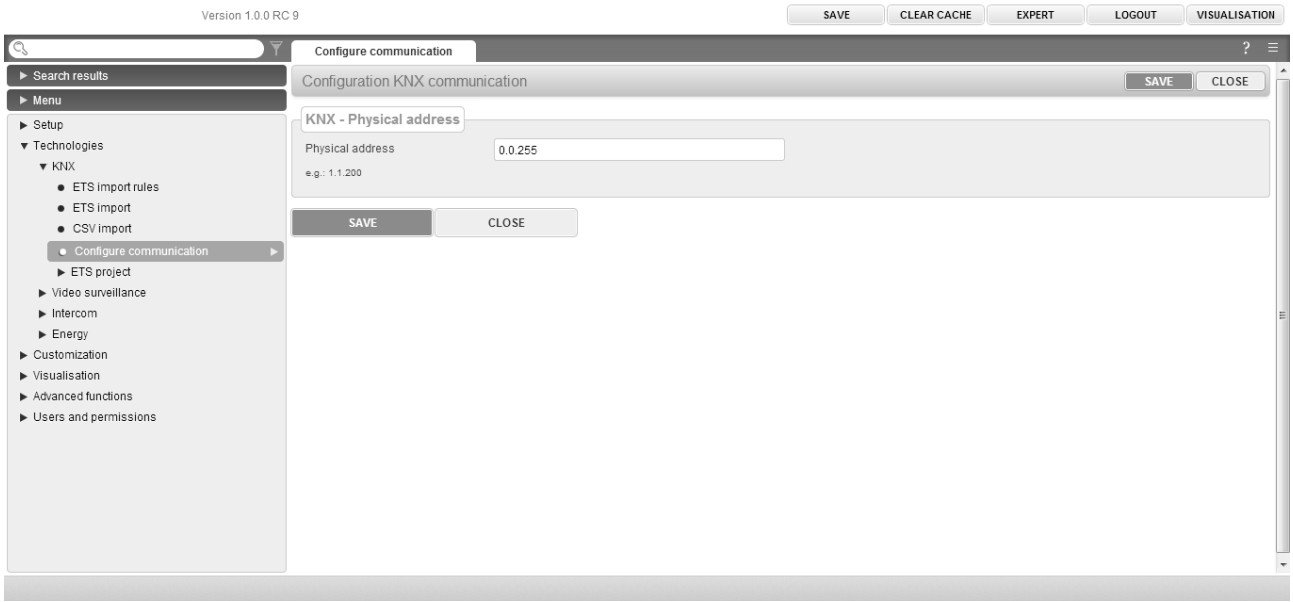
5.9 PHYSICAL ADDRESS OF U.MOTION KNX SERVER

Through the menu „CONFIGURE COMMUNICATION“ under „TECHNOLOGIES“ → „KNX“ you can change the physical address of U.motion KNX Server, used for the communication with the KNX bus.

The address must be entered in the format X.Y.Z, respecting the limitations given by the KNX specification:

- First number between 0 and 15
- Second number between 0 and 15
- Third number between 0 and 255

As distinct from the most KNX devices, which necessarily must use a physical address which corresponds to the line they are installed, U.motion KNX Server is able to communicate with all devices of the system, independently from its physical address. Therefore, modifying the physical address of the server has merely the purpose to avoid conflicts with other devices and to keep a certain alignment with the KNX system.



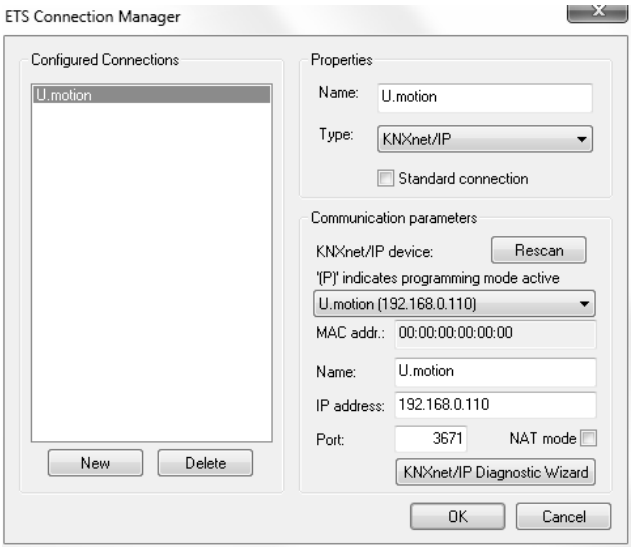
5.10 ETS GATEWAY

U.motion KNX Server offers the possibility to use the integrated KNX interface as a gateway, in order to use it as programming interface in ETS. In this way, the web server can be used to program KNX devices or to start diagnostic actions on the bus, without needing an additional interface (e.g. USB/KNX) connected to the own PC.

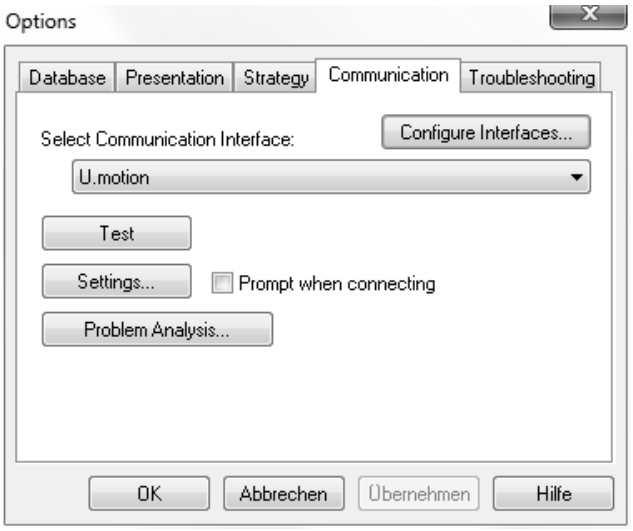
In the local network, the PC with the ETS installation can be connected directly to U.motion KNX Server (also wireless, if an active Wi-Fi connection is present).

When using ETS3, please follow the steps below:

- In the menu "Extras" please click on "Options" and select the section "Communication"
- Click on "Configure interfaces"
- Click on "New", type in "U.motion KNX Server" as name and "KNXNet/IP" as type
- Add manually the denomination and IP address of U.motion KNX Server and set "3671" as port (do NOT enable NAT mode)
- Confirm the changes by clicking on "OK"

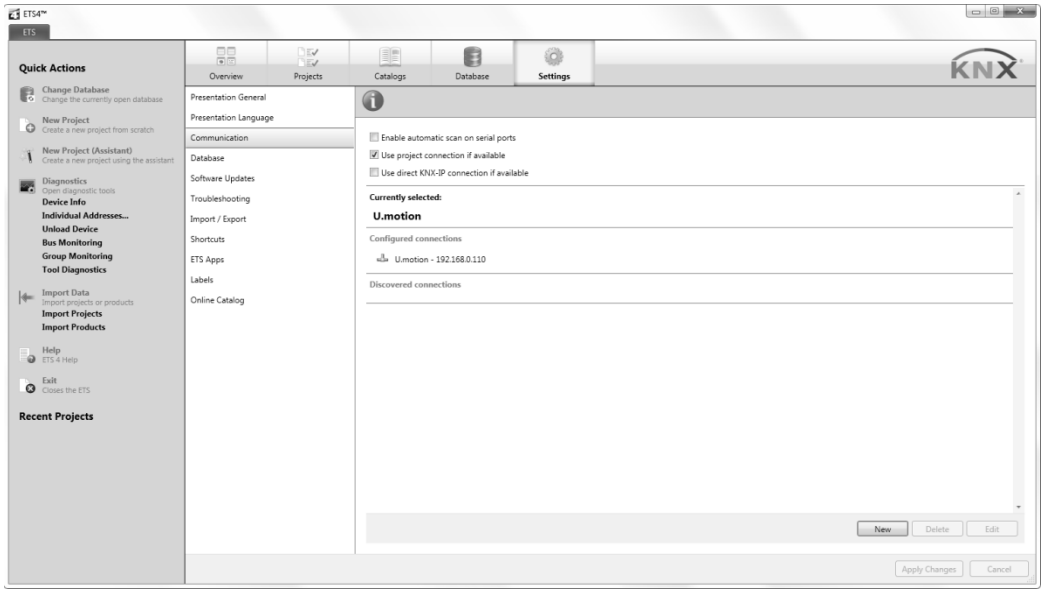


- Now select "U.motion KNX Server" as active communication interface and check the connectivity by clicking on "Test". If after a few seconds the message „OK" is shown, U.motion KNX Server can be used as interface.

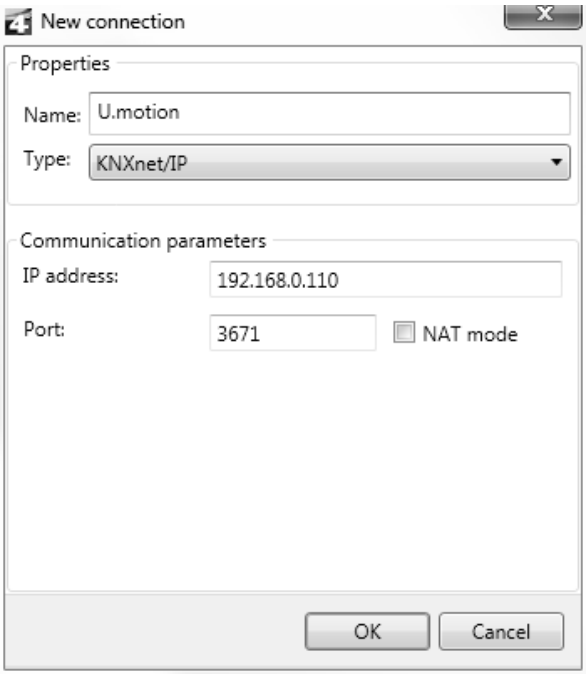


When using ETS4, please follow the steps below:

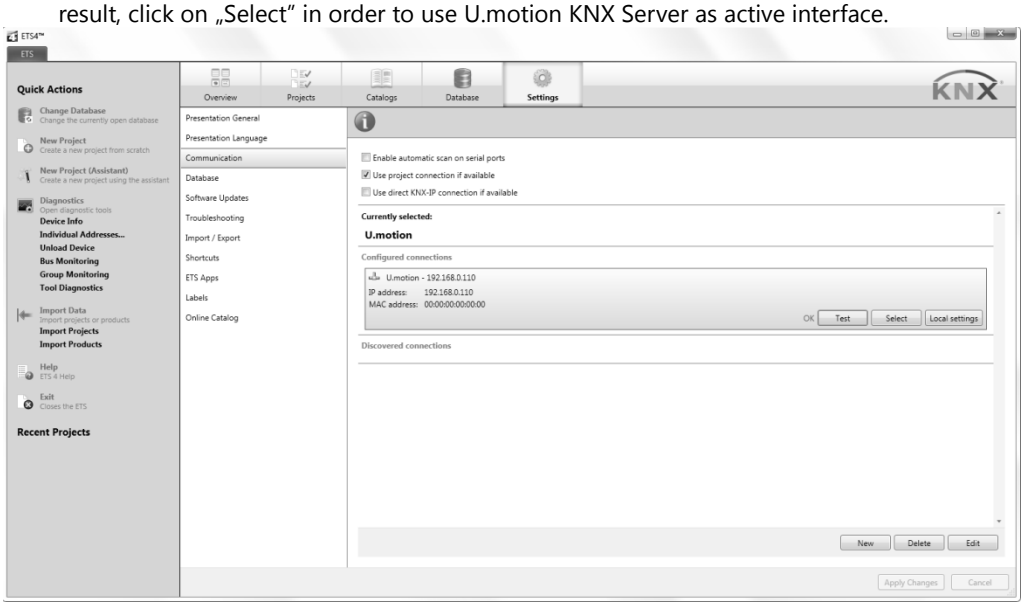
- In the main menu, please click on “Settings”
- In the lateral menu, click on “Communication“



- Click on “New” in order to open the popup “New connection”; enter a name for the connection, “KNXNet/IP” as type and manually insert the IP address of the server; lastly use „3671“ as port (do NOT enable NAT mode)



- After confirming through “OK”, the connection will be shown in the area “Configured connections”. Please select the created connection and click on “TEST“ in order to check the connectivity; at positive result, click on „Select” in order to use U.motion KNX Server as active interface.



The gateway function of U.motion KNX Server can only be used with the diagnostic function “GROUP MONITOR“; the diagnostic function “BUS MONITOR“ requires a direct connection to the bus. This is valid for ETS3 as well as for ETS4.

6 ROOMS

6.1 INTRODUCTION

This chapter deals with the creation and customization of rooms, in which the various objects are grouped in the VISUALISATION. Normally it is recommended to keep the structure of the rooms similar to the structure of the building itself. It will be easier for the user to control the building through the VISUALISATION, when the navigation in the VISUALISATION is the same as the user would have to do in the building for reaching a KNX device (light switch etc.). Such a VISUALISATION can only be created when the rooms are structured inside the VISUALISATION at the same way they are structured in the real building and when in each room all the object are located, which are also truly installed as KNX devices in the real rooms of the building. This is only a recommendation; naturally the rooms can also be created freely and filled with any kind of object / function desired.

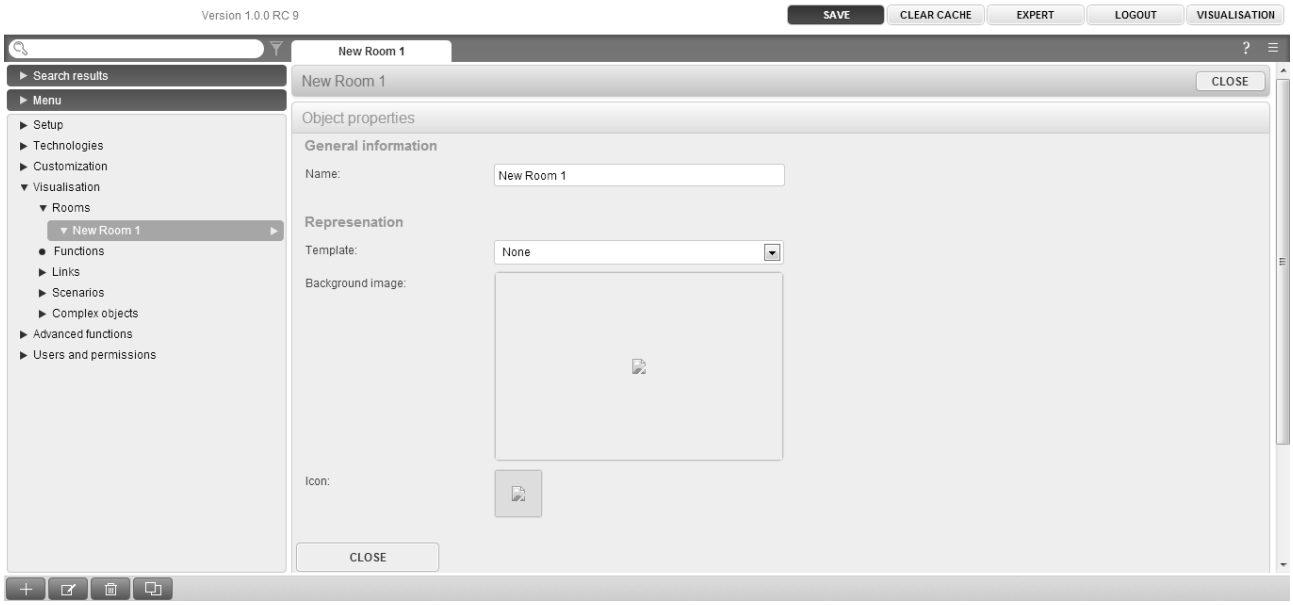
6.2 CREATE NEW ROOMS

In order to create a new room in U.motion KNX Server:

- Access the ADMINISTRATION area
- Select "VISUALISATION" → „ROOMS"
- Click on the ADD-button in the toolbar at the bottom

The new room will be added to the sub-menu "ROOMS". If an already existing room is selected when the ADD-button is pressed, the new room will be added within the selected room; in this way also a tree-structure for navigation in the VISUALISATION can be created (e.g. a room "1.floor" could contain other rooms like "kitchen" or "living room"; in the VISUALISATION by accessing the room "1.floor" will be like accessing a sub-menu containing two other rooms "kitchen" and "living room").

The configuration page of the new created room looks like shown below:



The settings for a new room are:

NAME	Name of the room that will also be shown in the VISUALISATION and the navigation menu of the VISUALISATION.
TEMPLATE	Defines the graphical layout through which the room will be shown inside the VISUALISATION; following templates are available: • GRID: the contained objects are shown in a table grid. It is possible to embed a picture at the top, at the right or at the left or as background of the contained objects. • BACKGROUND: The contained objects are positioned directly upon a background image. The option "None" means that the room acts as sub-menu for the navigation inside the VISUALISATION and so no objects will be shown in this room; only the contained sub-rooms will be shown in the navigation menu of the VISUALISATION.
BACKGROUND IMAGE	If the chosen template provides embedding a background image, here the desired image can be defined; with a simple click on the empty square a pop-up window will appear, showing all uploaded pictures and allowing their selection: Through the UPLOAD button further images can be uploaded to U.motion KNX Server; after a successful upload, the new images can be selected from inside the pop-up window.
ICON	For each room an appropriate icon can be selected:

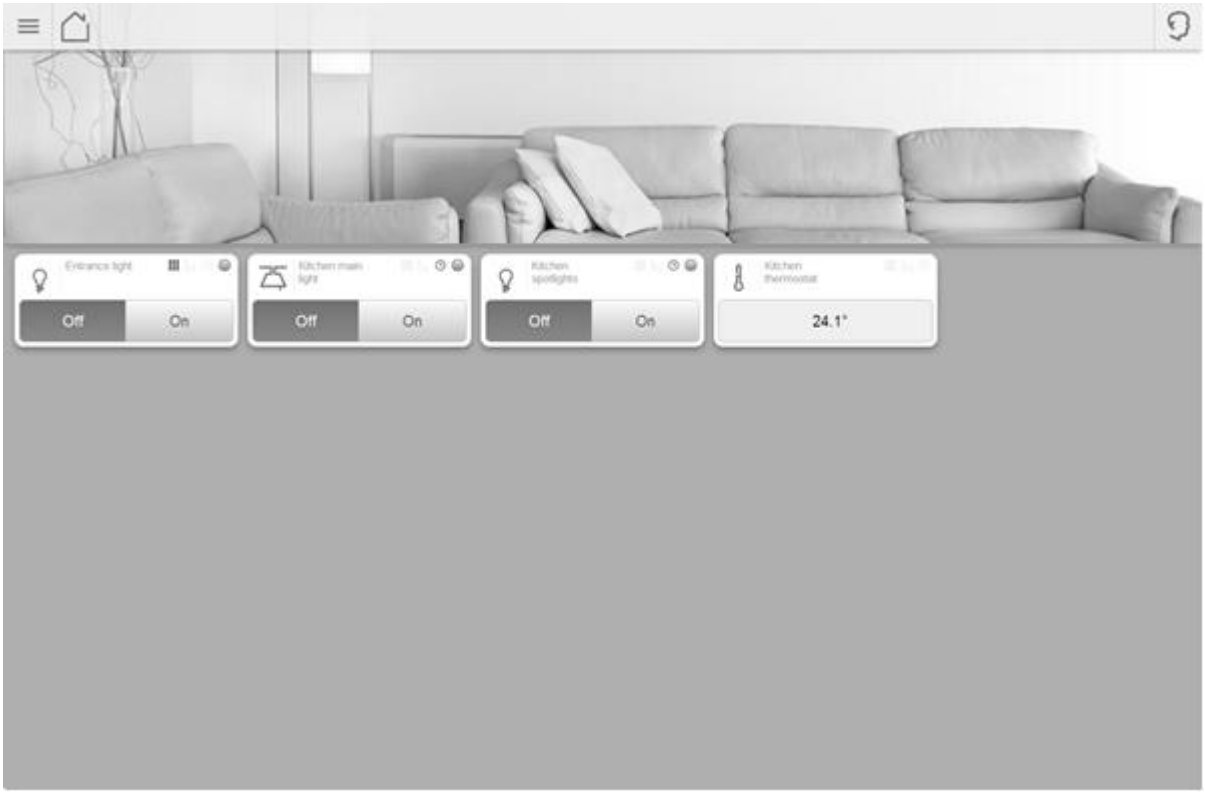
	 Simply click on the desired icon inside the appearing pop-up window to select it for the current room.

Enabling the EXPERT mode, the following additional options are available:

DESCRIPTION	Additional information that can simplify the search.
VISIBLE	Defines if the room is visible in the VISUALISATION.
OPEN IN NAVIGATION MENU	With this option it can be defined if navigation object present in the room should be opened inside the navigation menu or not. **Note**: This option is automatically activated if the room contains navigation objects (e.g. links).
ENABLE PIN CONTROL NEW PIN REPEAT NEW PIN	Whit this option the room can be PIN-protected. To enable the PIN-protection the PIN has to be inserted into the field “NEW PIN” and in “REPEAT NEW PIN”.

The following screenshots shows some rooms with different templates in the U.motion KNX Server VISUALISATION:

BACKGROUND



GRID WITH IMAGE AT THE TOP

GRID WITH IMAGE IN BACKGROUND

GRID WITH IMAGE AT THE RIGHT

If the visualisation is accessed through mobile devices, the layout, in which a room is displayed, can differ from the defined template. U.motion KNX Server does an automatic resize of the layout in dependency of the display resolution of the used device. Displays of smartphones and small tablets have too small display resolutions for showing a room in the "BACKGROUND" template, so U.motion KNX Server automatically changes the layout to "GRID" without any image. More information about this behavior can be found in the user manual.

The image used as background image must have a format that can be shown in a browser. It is recommended to use only images in JPEG or PNG format (also supports transparency). The size of the images (h x w) must be adjusted before the image is uploaded to U.motion KNX Server; please consider the following points:

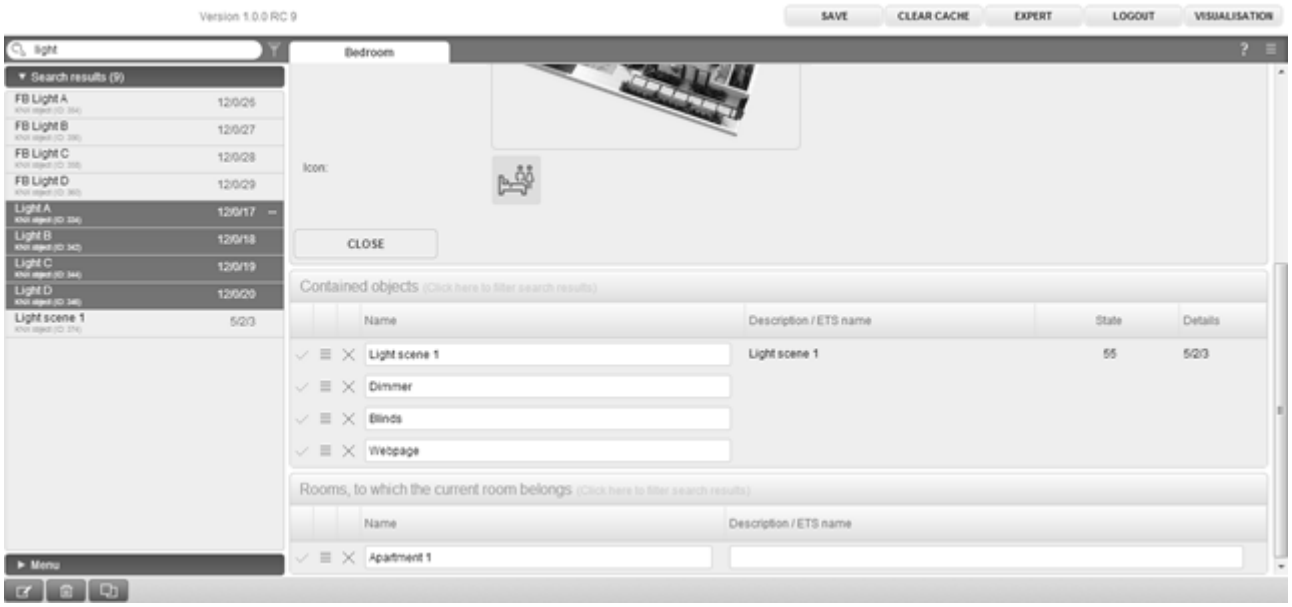
- If you use the template "BACKGROUND" to visualise a room, then the background image will be displayed in real size (pixels) without any automatic scaling; the image is placed in the left upper corner.
- If you use one of the "GRID" templates for the visualisation of a room, then the image is scaled, in order to have the optimal size at the defined position.

The usage of high resolution images (e.g. HD photos) has a double disadvantage: on one side, the upload of such big sized images to U.motion KNX Server takes longer and also the first loading times increase when a room is opened inside the VISUALISATION, because of the high data volumes caused by the image. Furthermore, when the template “BACKGROUND” is used to visualize a room, on devices with smaller resolutions image itself, only a part of the background image will be visible.

6.3 Insert Objects into Rooms

As soon as a room was created, it is possible to add objects to a room:

- Open the target room in a new tab
- In the area “CONTAINED OBJECTS” all the objects contained in the room are listed (initially empty)
- Search the desired objects with the search function and drag them inside the area
- The order of the single objects can be changed by dragging the single objects (using the MOVE-button) to the desired position (for the templates „GRID” only)



Of course it is also possible to remove objects from a room. Simply press the DELETE-button of an object in the list and the object is removed from the room; however, this DOES NOT delete the object from the project!

All sub-rooms contained in a parent room are listed in the same area as all the other objects. Such sub-rooms are not visible in the VISUALISATION of rooms displayed with a template of type “GRID” and are only shown in the navigation menu of the VISUALISATION;

6.4 DELETING ROOMS

To delete a room, the desired room must be selected through the search engine or the ADMINISTRATION menu and then the DELETE-button must be pressed, just as any other object is deleted in U.motion KNX Server.

Deleting a room does not delete the object contained in that room; they still remain available in the U.motion KNX Server database (and for example in the pages of the FUNCTIONS menu).

6.5 CUSTOMIZING THE BACKGROUND VIEW

The personalization of a room with the configured template "BACKGROUND" is done directly within the VISUALISATION. If the user has the necessary permissions, there will be an icon called "EDIT PLAN" in the toolbar, through which the user can switch into the editing mode. The editing mode permits the following actions:

- The single objects can be moved to the desired position (at the beginning all the objects will be placed in the left upper corner, one over the other)
- For each object can be defined, whether it should have a graphical shade or not.
- For each object can be configured whether its name should be visible in the VISUALISATION or not.

It is also possible to place transparent areas on the background image, which are linked to the corresponding sub-rooms; when using the template “BACKGROUND”, sub-rooms will be represented through a touch sensitive, transparent rectangle which can be placed on the background image and used for navigation.

For detailed information, please refer to the user manual.

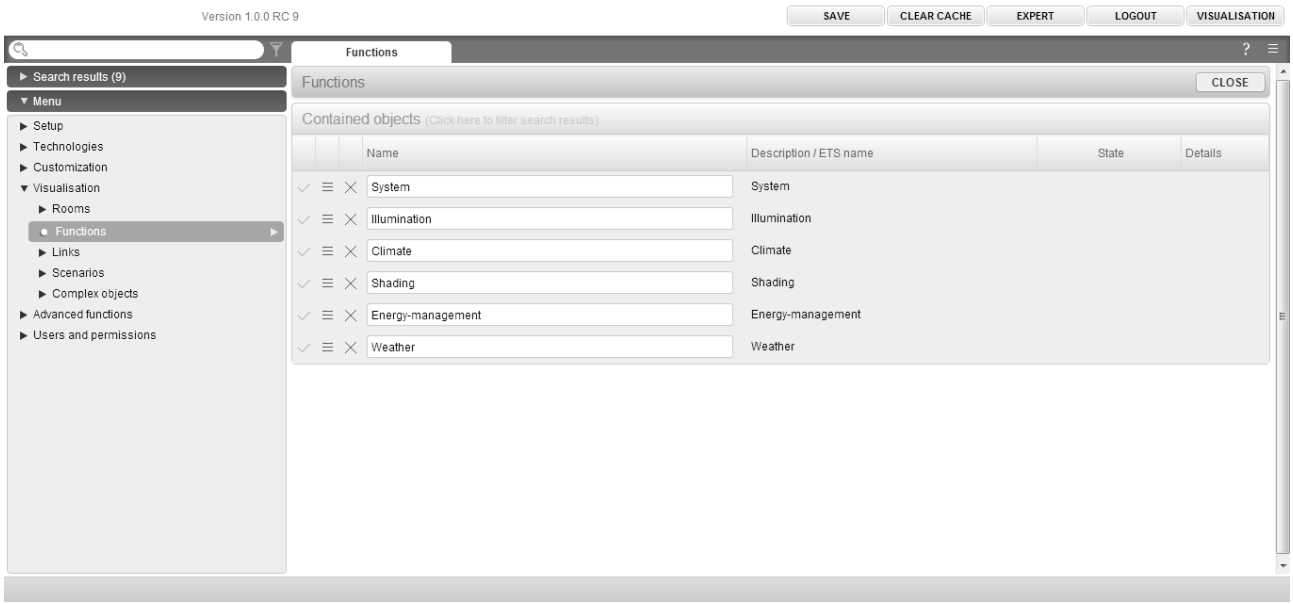
7 FUNCTIONS

7.1 INTRODUCTION

This chapter describes how to navigate in the VISUALISATION with the help of the FUNCTIONS menu and provides information on how to optimally configure objects for the navigation with the FUNCTIONS.

7.2 ADMINISTRATION OF THE FUNCTIONS

The FUNCTIONS can be configured in the ADMINISTRATION area under “VISUALISATION” → “FUNTIONS”:



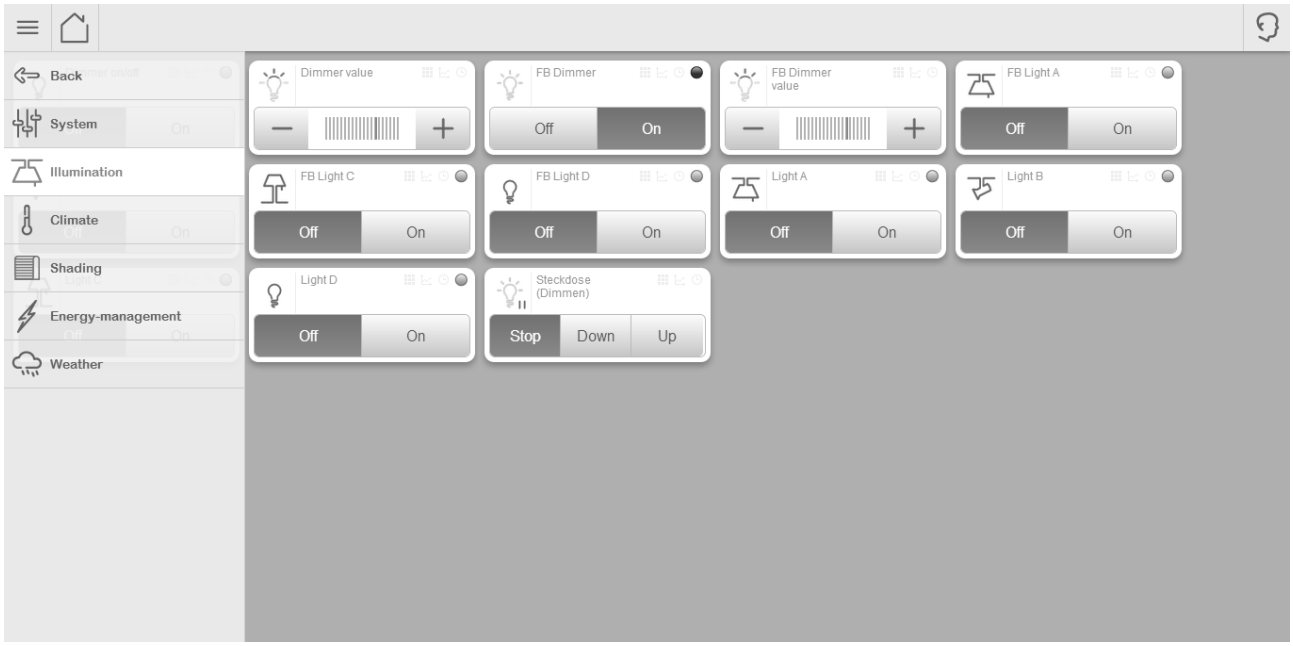
It is recommended to switch to EXPERT mode for being able to see also hidden functions.

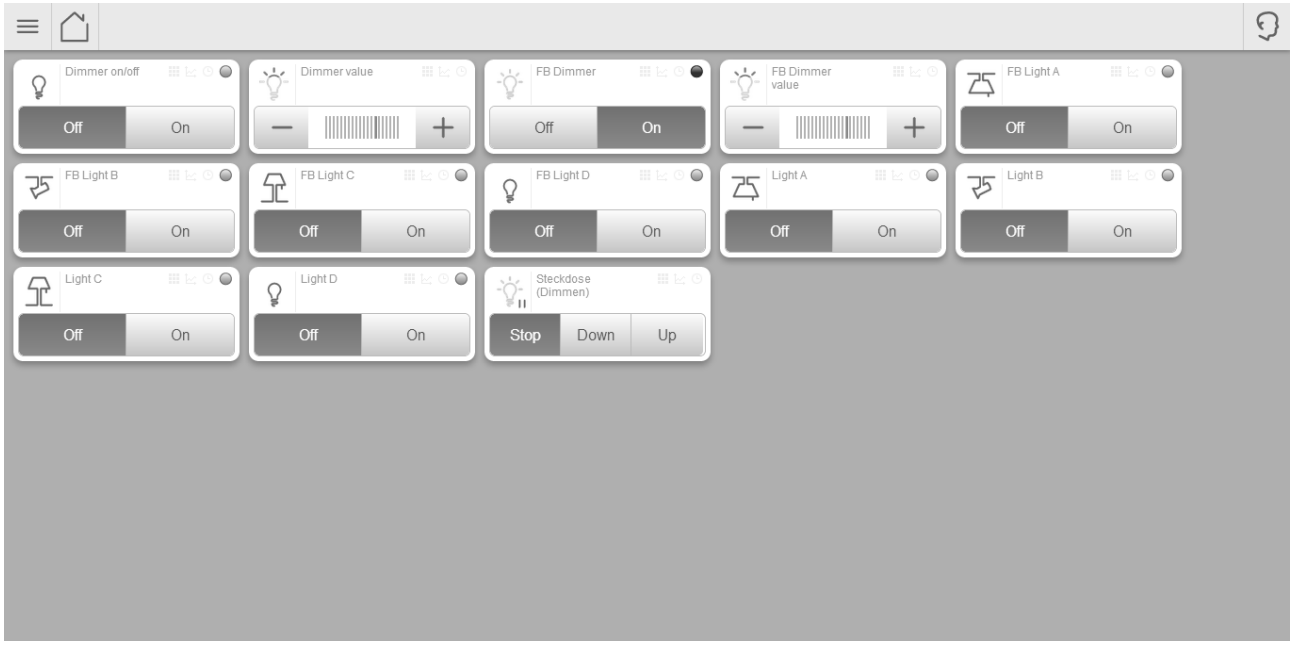
In the displayed list following can be done:

- The names of the single functions can be changed
- The order of the functions can be changed via drag and drop, pulling the single functions to the desired position (which will also be used in the VISUALISATION).
- Not used functions can be hidden, so that they are not visible in the navigation menu of the VISUALISATION.

7.3 FUNCTIONS IN THE VISUALISATION

If you click on “FUNCTIONS” in the navigation menu of the VISUALISATION, all visible FUNCTIONS are listed inside the navigation menu and all the objects assigned to the currently open FUNCTION page are shown in GRID layout without background image. Depending on the selected FUNCTION, the related objects are displayed. So it is possible to reach objects with certain functionalities directly, instead of navigating to the individual objects through the rooms, in whose they are located. Especially when different objects of the same functionality shall be controlled together, this type of navigation can be very convenient (for example changing the set points for air conditioning, control more blinds, alarm functions, etc.).





Functions that contain a lot of objects easily result in complex pages in the VISUALISATION and especially on mobile devices their operation could become impractical. So you should take care about what kind of objects will be assigned to a function, in order to keep the number of objects per function at a comfortable level.

An alternative are COMPLEX OBJECTS, which allow grouping multiple objects in one object (e.g., all objects of a thermostat); for more detailed information please see the related chapter.

8 COMPLEX OBJECTS

8.1 INTRODUCTION

This chapter deals with COMPLEX OBJECTS, which allow grouping different KNX objects in a single object. Different KNX objects, which are necessary for the operation of the same KNX device, can be combined into a single object with a special layout (e.g. thermostats); complex objects are handled inside the VISUALISATION just like any other object of the VISUALISATION.

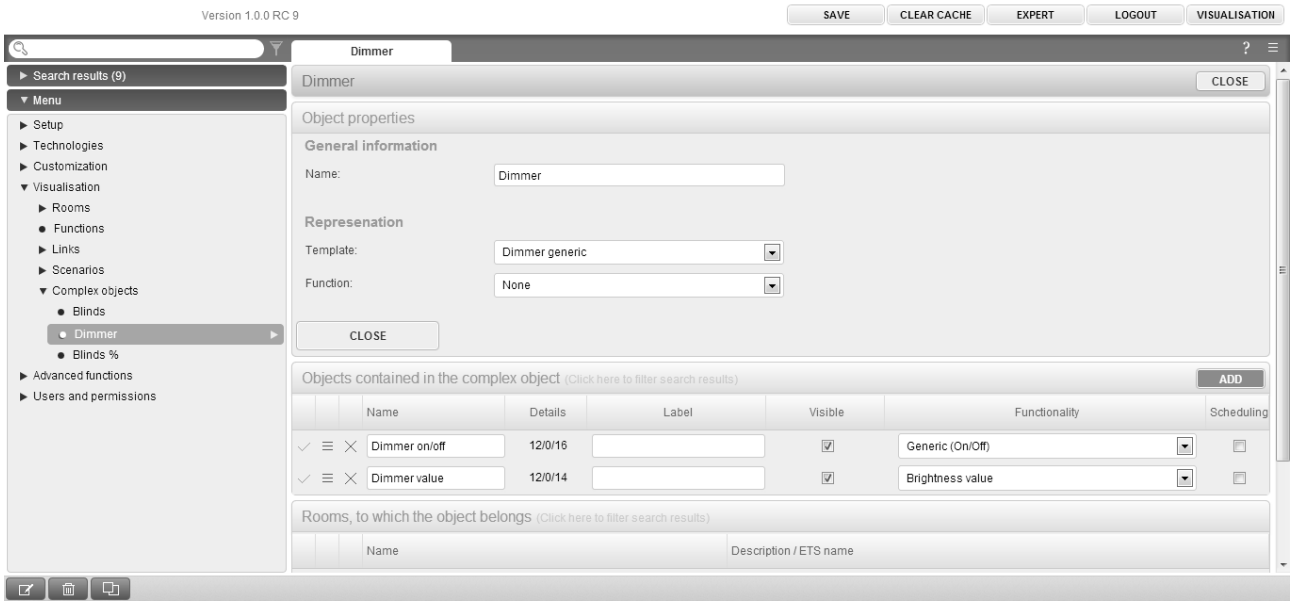
8.2 CREATE COMPLEX OBJECTS

To create a COMPLEX OBJECT, the procedure is identical as the creation of any other object in the software:

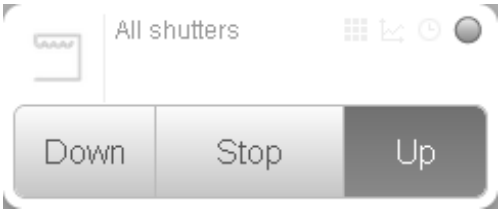
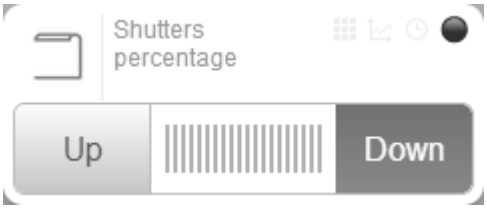
- Open the ADMINISTRATION area and select “VISUALISATION““ → “COMPLEX OBJECTS“
- Press the ADD button
- Afterwards open a new tab with the configuration page of the new created COMPLEX OBJECT

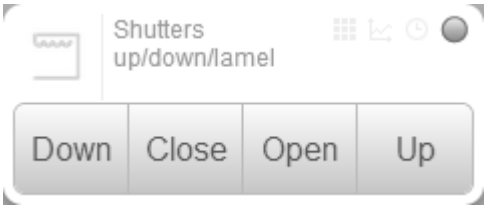
The following settings will be available:

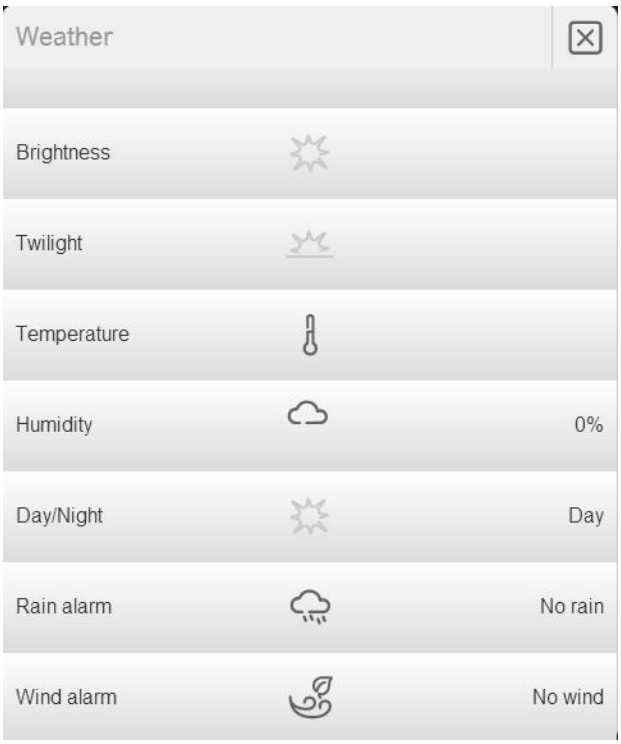
NAME	Name of the COMPLEX OBJECT
TEMPLATE	Graphical icon, used to display the COMPLEX OBJECT inside the VISUALISATION
FUNCTION	Function assigned to the COMPLEX OBJECT (optional)



The chosen TEMPLATE defines not only which icon the object should use for representation inside the VISUALISATION, but also which kind of sub-objects it can contain; the following TEMPLATES are available:

DIMMER	With this TEMPLATE the command “ON/OFF” and the percent value of a KNX dimming actuator can be controlled.
SHUTTERS	With this TEMPLATE the commands “UP”, “DOWN” and “STOP” of a shutters actuators channel can be controlled in the same object. 
SHUTTERS UP/DOWN/PERCENTUAL	Similar to the previous object, instead of the STOP function it provides a percentage control of the shutter position. 

SHUTTERS WITH LAMELLAE	Permits to control the shutter position as well as the opening / closing of its lamellae. 
THERMOSTAT	Allows grouping of different commands and status feedbacks from KNX thermostats into one object; in the VISUALISATION itself only a small icon with the key information is shown; by clicking on the corresponding icon of such an object, a popup window containing all objects defined as visible in the COMPLEX OBJECT will appear. For different types of thermostats different templates / options are available.

RGB	Allows grouping all necessary objects for the control of RGB lights in one object (control of the individual color channels, "ON / OFF" commands, color intensity, etc.)
WEATHER STATION	Permits to group all objects related to a weather station into one object. 

MULTIROOM ZONE	Permits to combine into a single pop-up all control objects of a Multiroom audio zone, connected via KNX:
GENERIC	Allows grouping several objects into a pop-up window, where the structure and the objects to be shown can be freely chosen (refer to the appropriate chapter of this manual)

Depending on the selected TEMPLATE, only compatible objects can be added, since the COMPLEX OBJECT needs to understand where each object must be positioned and which functionality they will have to assume; for the available functions of a COMPLEX OBJECT, only compatible objects can be used.

8.3 OBJECT ASSIGNMENT

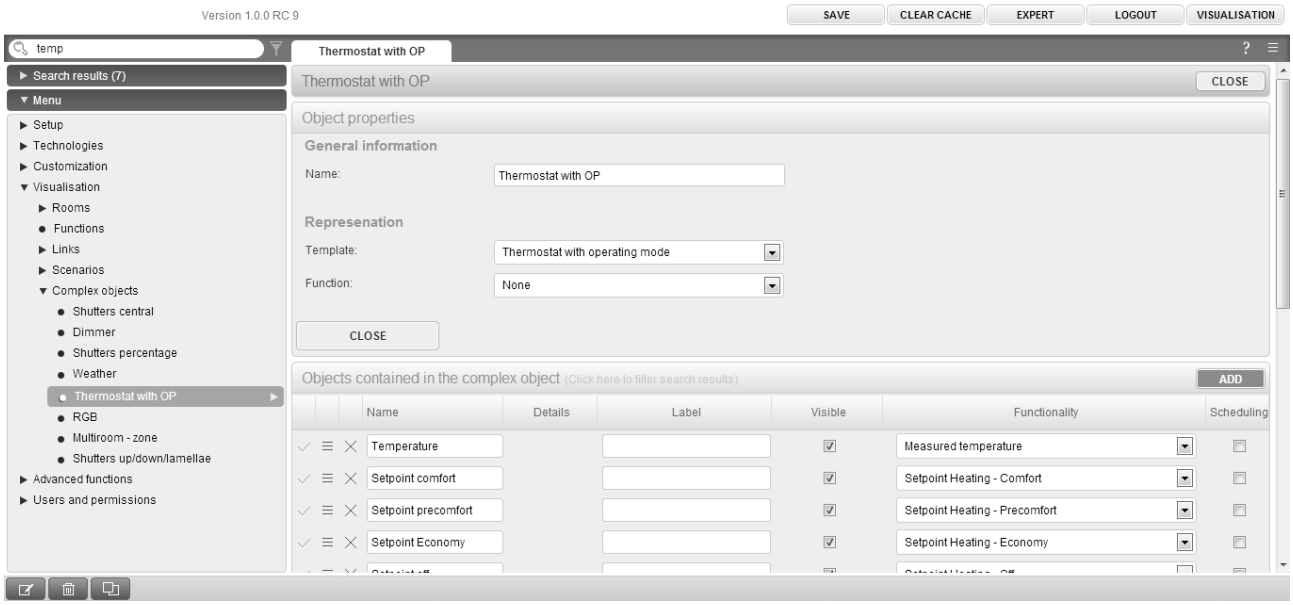
Once a COMPLEX OBJECT is defined, the desired objects can be inserted into the area "OBJECTS CONTAINED IN THE COMPLEX OBJECT" for being assigned to one of the functions the COMPLEX OBJECT offers. Search for the desired objects with the search function and pull them inside the area ("drag and drop"). Each object must be assigned to the corresponding function of the COMPLEX OBJECT. In the parameter "FUNCTIONALITY" the corresponding function for an object can be selected; the available functions will depend on the objects type; for example if a 2-byte temperature value was added, you could select only between the functionality "Measured temperature" or one of the "set point" functionalities (but not the operating mode, since it is either a 1byte or different 1bit objects).

The entry in the column “FUNCTIONALITY” also defines the graphical aspect of the related sub-object.

Naturally it is still possible to change the function of the sub-object also in a second moment; in this case also the visualisation within the complex object will change. By re-changing the entry of the column “FUNCTIONALITY” of the selected sub-object, also the graphical aspect of the sub-object will change again.

It is furthermore possible to add sub-objects to a complex object directly through an ADD button in the section of the contained objects. This will create a VIRTUAL OBJECT (check out chapter 11.4 for details) and connect it with the complex object. The graphical aspect of the new sub-object can be defined directly through the entry within the column “FUNCTIONALITY”.

Since this objects are virtual objects, they will not send any commands to the system (like for example KNX objects), but are primary used for labeling or demonstration purposes.



Through the option "VISIBLE" it is possible to hide objects, which have been inserted in the COMPLEX OBJECT, in the rest of the VISUALISATION. Since the individual objects are now grouped in a COMPLEX OBJECT, it could be desired that they should not be visible in other pages of the VISUALISATION (this concerns mainly the FUNCTIONS page).

Finally, through the last column, it is possible to configure one of the objects of a COMPLEX OBJECT for being scheduled. When the user configures a scheduling for the COMPLEX OBJECT, in fact the object enabled for scheduling will be scheduled; only one object can be enabled for scheduling inside a COMPLEX OBJECT. For example a COMPLEX OBJECT with the TEMPLATE "Thermostat" could be configured to enable scheduling for the operation mode of the thermostat (time based switching between comfort- and standby-mode). If one of the objects of a COMPLEX OBJECT is enabled for scheduling, the icon of the COMPLEX OBJECT will show the related symbol on it in the VISUALISATION; if the related symbol is not shown on the icon of a COMPLEX SYMBOL, no time scheduling is possible.

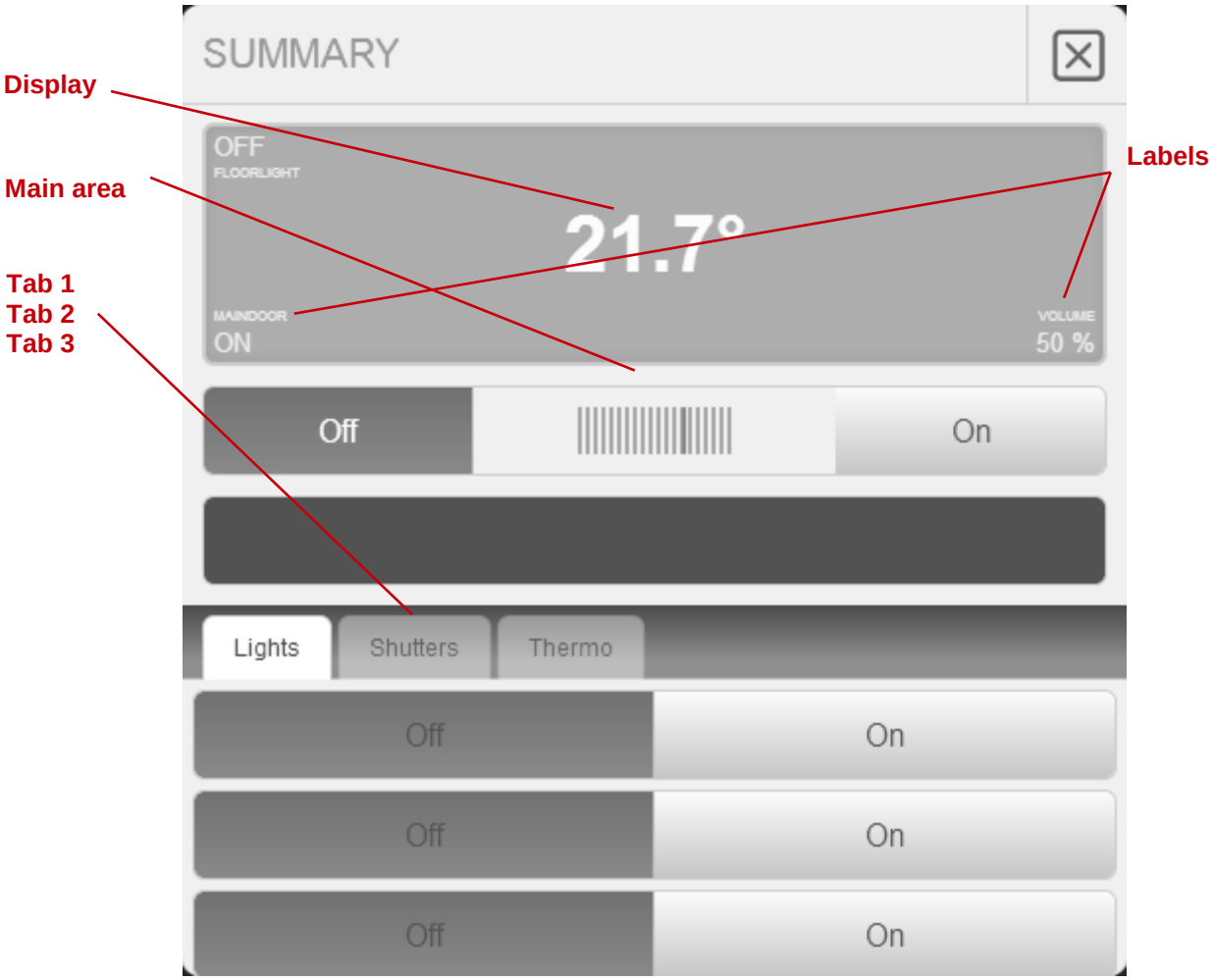
8.4 GENERIC COMPLEX OBJECT

The TEMPLATE “GENERIC” for complex objects permits to group different objects into a definable structure, which in the VISUALISATION will be shown inside a pop-up window; structure and objects can be chosen freely.

The general settings for the TEMPLATE “GENERIC” are the following:

LABEL TAB 1 LABEL TAB 2 LABEL TAB 3	Label of the related tab in the COMPLEX OBJECT

The TEMPLATE “GENERIC” allows displaying different objects on different positions in a pop-up window with the following characteristics:



The "DISPLAY" is an area for showing status and feedback information of KNX objects. It is divided in the following sections:

DISPLAY-VALUE CENTER	Value shown in the center of the display area
DISPLAY-VALUE UP/LEFT DISPLAY-VALUE UP/RIGHT DISPLAY-VALUE DOWN/LEFT DISPLAY-VALUE DOWN/RIGHT	Value displayed in the configured corner of the display area. Each value can be displayed in combination with a selectable label.

The MAIN AREA can contain up to 10 objects, which will be positioned one under the other. If a label is defined for one of these objects, it will be displayed above the corresponding object in the MAIN AREA.

The lower section allows adding up to 30 additional objects, structured in 3 tabs, where each tab can contain up to 10 objects. If a label for an object is defined, this label will be shown above the corresponding object. Switching between the various tabs is done by clicking on the label of the corresponding tab; tabs not containing any objects won't be displayed.

Even for complex objects with the TEMPLATE "GENERIC" always the same approach for adding objects is used: search the desired objects with the search function and pull them into the corresponding area; then select functionality, define the label (optional), if desired enable an object for scheduling and select the functionality; the selection of functionality determines where the object is displayed in the COMPLEX OBJECT: e.g. an object with the functionality "Display - Value center" will be displayed in the center of the DISPLAY area of the COMPLEX OBJECT..

For each added object a label can be defined, which will be displayed above the corresponding object in the COMPLEX OBJECT.

Attention: If for more than one object the same functionality has been selected, it is possible that the objects are not being displayed correctly in the VISUALISATION!

Vice versa, it is possible to add the same object several times into the COMPLEX OBJECT and assign different functionalities (e.g.: display an object on one side in the DISPLAY AREA as status and on the other side add it to the MAIN AREA to permit also operation of the object)!

The object, which is configured with the functionality "DISPLAY – VALUE CENTER", will be used to display the complex object in its reduced form inside the VISUALISATION (“BACKGROUND", "GRID"); furthermore, also the state of this object will be shown in the reduced complex object, on the left side of the button intended to open the popup window of the COMPLEX OBJECT.

8.5 RGB LED CONTROL

The complex object RGB permits the possibility to control RGB lights in easy way.

9 SCENARIOS

9.1 INTRODUCTION

This chapter describes the extensive possibilities offered by the SCENARIOS in U.motion KNX Server. With SCENARIOS, different sequences can be created, which can be launched manually, through a scheduling or depending on events.

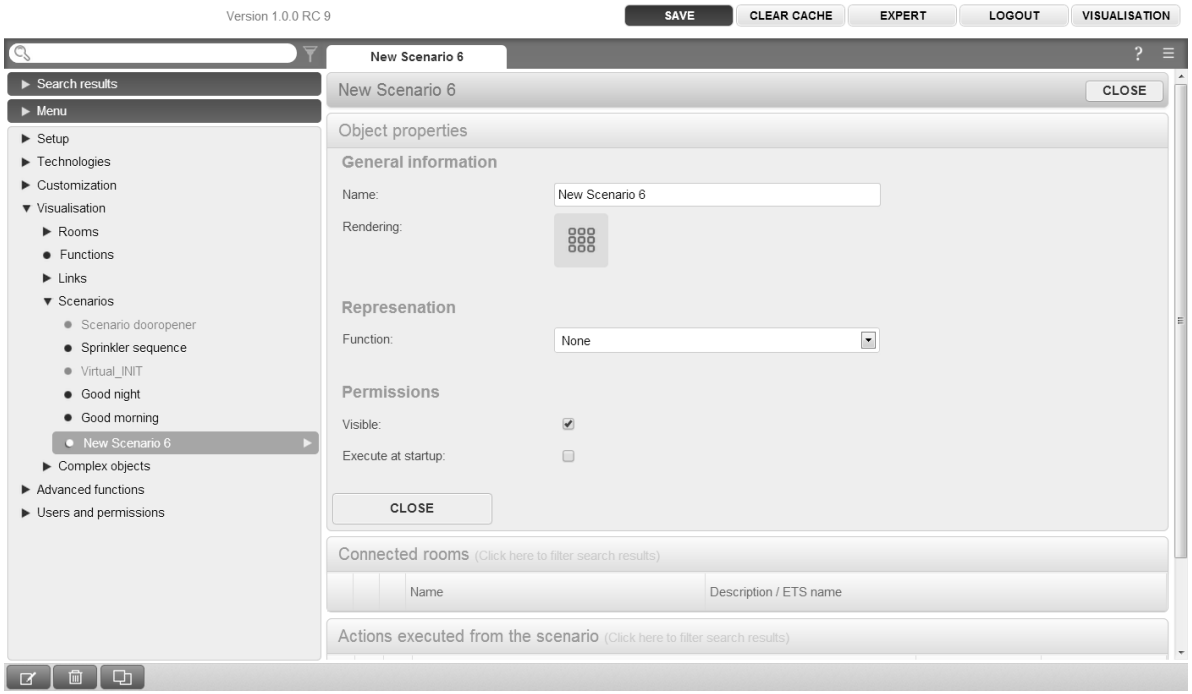
The SCENARIOS must not be confused with the "KNX SCENARIOS". The "KNX SCENARIOS" (also called “light scenes”) are basically KNX objects that write a numeric value to the KNX bus and are already created in the ETS-project. The SCENARIOS of U.motion KNX Server are part of the software and are not integrated in the ETS project; they are stored on U.motion KNX Server and also operate from U.motion KNX Server. Those SCENARIOS are much more flexible than the "KNX SCENARIOS" because the software offers more possibilities for the SCENARIOS as only writing a numeric value on the KNX bus.

9.2 CREATE SCENARIOS

To create a new scenario:

- Open the ADMINISTRATION area of U.motion KNX Server
- In the navigation menu choose “VISUALISATION“→ „SCENARIOS“
- Press the ADD-button

The new created SCENARIO will appear in the navigation menu and can be opened in a new tab for configuration:

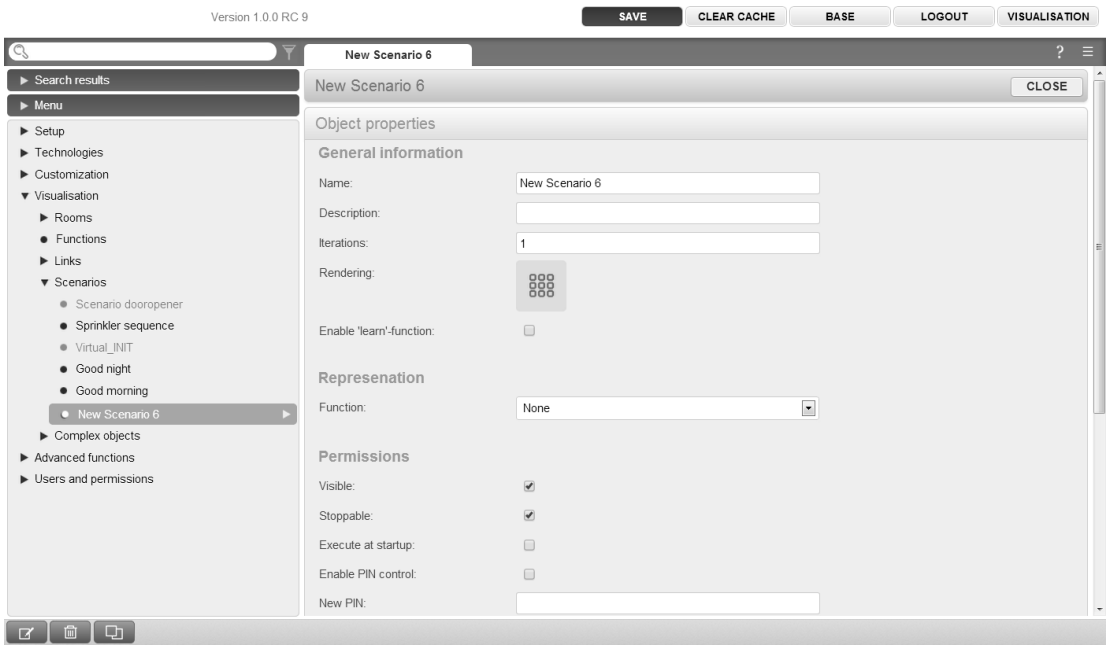


In the BASE mode the following settings are available:

NAME	Name of the SCENARIO inside the VISUALISATION
ICON	Graphical icon, through which the SCENARIO is displayed inside the VISUALISATION
VISIBLE	Defines whether the scenario should be visible or not within the visualisation
EXECUTE AT STARTUP	If enabled, the scenario will be started after the startup of the software. NOTE: the execution takes place only after U.motion KNX Server has terminated its internal function routines and controls, so after each reboot of the device and also after a restart of the communication services.

By switching to EXPERT mode, the following additional options will be shown:

DESCRIPTION	Additional information that can simplify the search.
ITERATIONS	Number of repetitions. This number will indicate how often the SCENARIO will be repeated. Normally, this parameter is set to "1"; if the scenario shall be repeated several times, the desired repeat value can be configured here.
ENABLE 'LEARN'-FUNCTION	With this function it is possible to save the state of the contained KNX objects. With this function the end user can customize the scenarios for his needs, by setting the system in the desired state and clicking on "UPDATE".
STOPPABLE	If you activate this option, the SCENARIO can be stopped again after it has been started; this only applies to scenarios with wait commands.
ENABLE PIN CONTROL NEW PIN REPEAT NEW PIN	Whit this option the room can be PIN-protected. To enable the PIN-protection the PIN has to be inserted into the field "NEW PIN" and in "REPEAT NEW PIN".



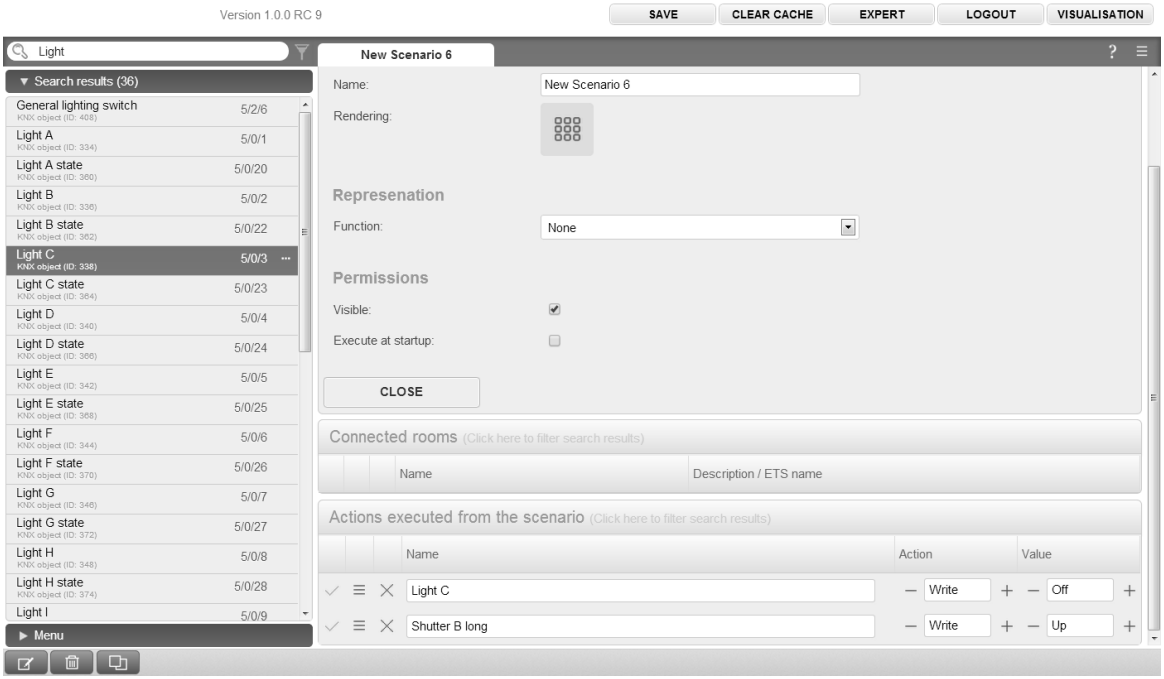
All SCENARIOS will be automatically included in the corresponding page of the VISUALISATION, which is accessible from the navigation menu; of course the single SCENARIOS can also be inserted into different rooms.

9.3 ADD ACTIONS TO A SCENARIO

In order to add actions to a created SCENARIO, proceed as follows:

- Open the area “ACTIONS EXECUTED FROM THE SCENARIO”
- Search the desired objects with the search function and pull them inside the list (“drag & drop“)
- For each object dragged in the list the appropriate “ACTION” and if necessary the corresponding “VALUE” can be defined. For KNX objects as “ACTION” can be chosen between “Read” and Write“; “Read” will send a status request for the corresponding group address on the KNX bus, “Write” sends the configured “VALUE” as command on the corresponding group address on the KNX bus.

An example of a SCENARIO with defined actions can be seen in the following screenshot:



9.4 SCENARIOS WITH WAIT COMMANDS

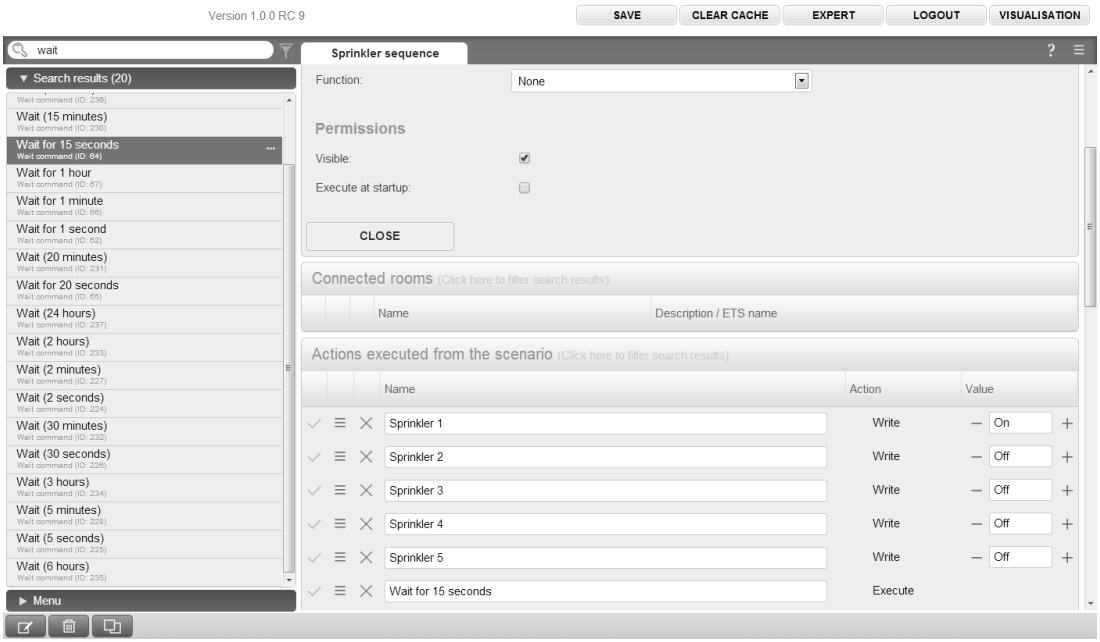
It is possible to create a delay between the individual actions of a SCENARIO using WAIT COMMANDS, which cause the SCENARIO to pause for a certain period of time. Thus makes it is possible to shift the various actions of a SCENARIO in time.

The WAIT COMMANDS are objects, which are added to the area "ACTIONS EXECUTED FROM THE SCENARIO" just like KNX objects. For adding a WAIT COMMAND, search for the keyword "wait" with the search function and pull the desired WAIT COMMAND into the desired position of the area ("drag and drop"). In U.motion KNX Server the following waiting times are available:

- 1 second
- 2 second
- 5 second
- 10 second
- 15 second
- 20 second
- 30 second
- 1 minute
- 2 minutes
- 5 minutes
- 10 minutes
- 15 minutes
- 20 minutes
- 30 minutes
- 1 hour
- 2 hours
- 3 hours
- 6 hours
- 12 hours
- 24 hours

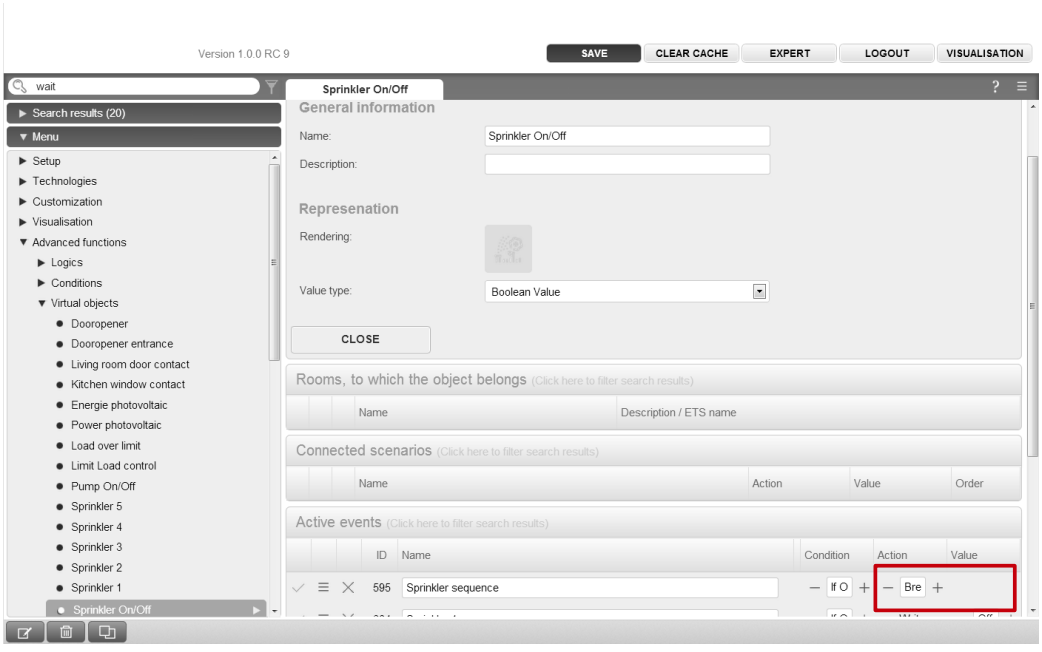
The WAIT COMMANDS can be found through the search function, by searching for the keyword "**wait**".

The WAIT COMMANDS can be found only through the search function, because they are directly integrated inside the U.motion KNX Server software with the English name “wait”. If WAIT COMMANDS should be filtered by time in the results of the search function, the time unit "sec", "min" or "hour" must be added to the keyword “wait”, separated by a blank space.



Scenarios with built-in WAIT COMMANDS can be stopped after they once have been started; for this purpose the graphic icon of the SCENARIOS includes a STOP-button. If this STOP-button is pressed, the SCENARIO is interrupted. The states of the object contained in the SCENARIO, which were already changed when starting the SCENARIO, will not be restored, just the further execution of the SCENARIO will be stopped.

Stopping a SCENARIO can also be triggered by an event, in dependence of the status change of another object (e.g. a KNX object):

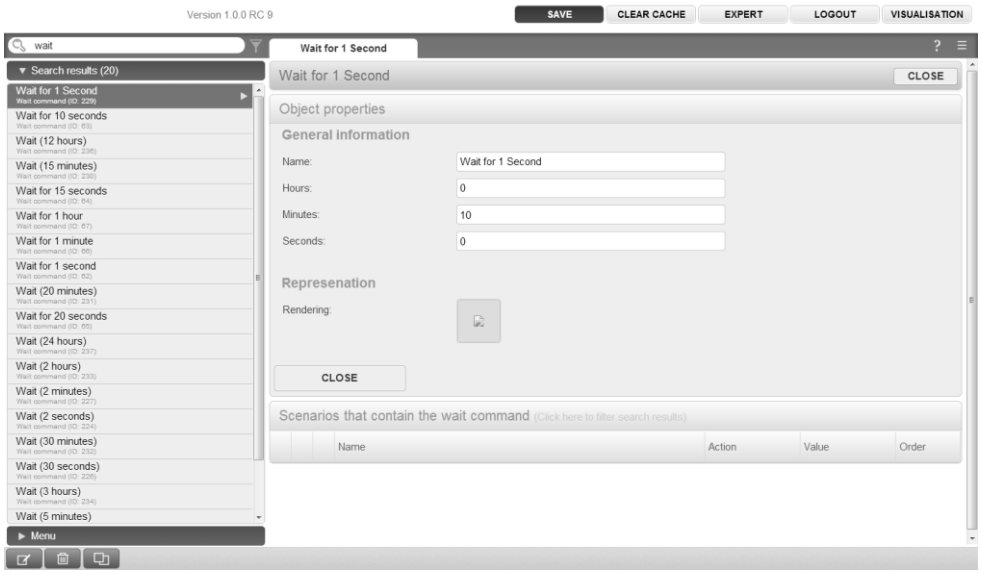


9.5 CUSTOMIZATION OF THE WAIT COMMANDS

Objects of the type "WAIT COMMAND", which allow to insert delays into SCENARIOS, can be customized in the following way:

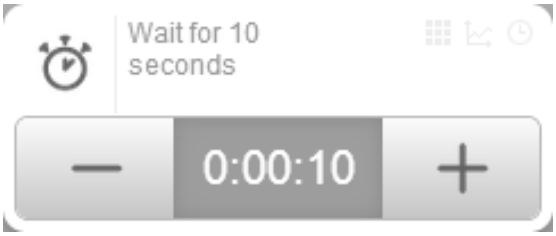
- Locate the desired WAIT COMMAND using the search function
- Before modifying the WAIT COMMAND, create a clone using the corresponding button in the TOOLBAR (by modifying the original WAIT COMMAND there is the risk that other functionalities using this WAIT COMMAND could stop working as desired)
- Access the configuration window of the cloned WAIT COMMAND

The configuration window of a WAIT COMMAND permits to configure HOURS, MINUTES and SECONDS, through which the desired delay can be created. Please fill in only integer values; furthermore the overall time must be between 1 second (minimum delay) and 23 hours, 59 minutes, 59 seconds (maximum delay).



The configuration window also gives you an overview in which scenarios the current WAIT COMMAND is included. Please do not use this area to add the command to further scenarios. Instead, always drag the WAIT COMMAND into the configuration page of the scenario.

The WAIT COMMANDS can also be integrated into the visualisation (into rooms as well as into complex objects). This has the advantage that also the final user will be able to change the value of the WAIT COMMAND, without needing the permission to access the ADMINISTRATION. The following screenshot shows the representation of a WAIT COMMAND in a room with GRID view:



When WAIT COMMANDS are added to the VISUALISATION, it is even more important that you only work with CLONED objects. Otherwise there is the risk that the final user unintentionally changes also the way other functions / scenarios work.

10 LINKS

10.1 INTRODUCTION

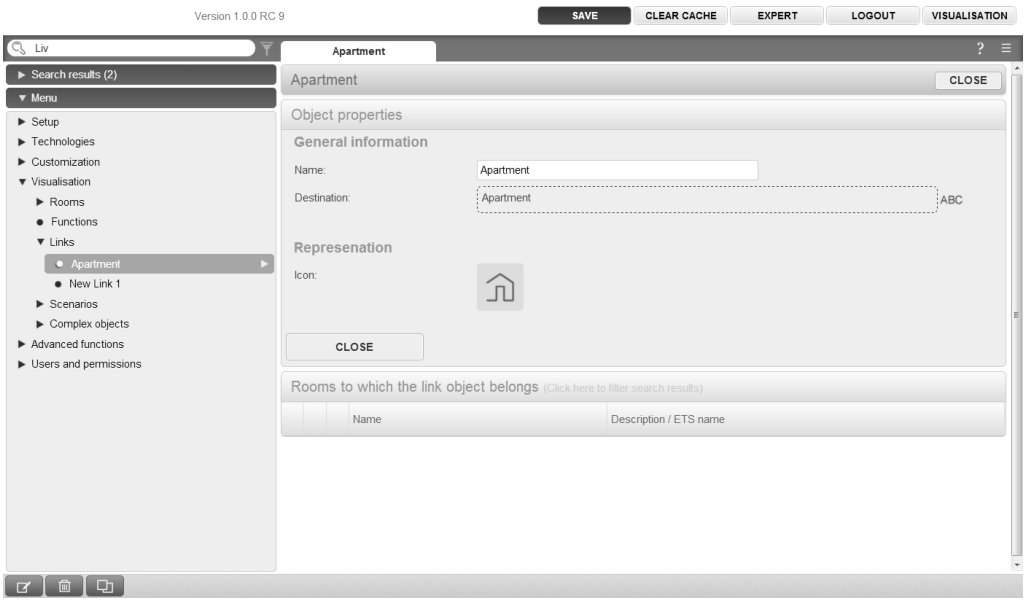
Objects of type LINK permit to create page jumps within the visualisation of U.motion KNX Server. It is possible to call as well pages of the visualisation (rooms) as also links to other web servers or web pages, which are in the connection directly accessible (without having to use the navigation menu).

10.2 CREATION OF LINKS

In order to create a new link:

- Open the ADMINISTRATION area of U.motion KNX Server
- In the navigation menu choose “VISUALISATION“→ „LINKS“
- Press the ADD-button

The new created LINK will appear in the navigation menu and can be opened in a new tab for configuration:

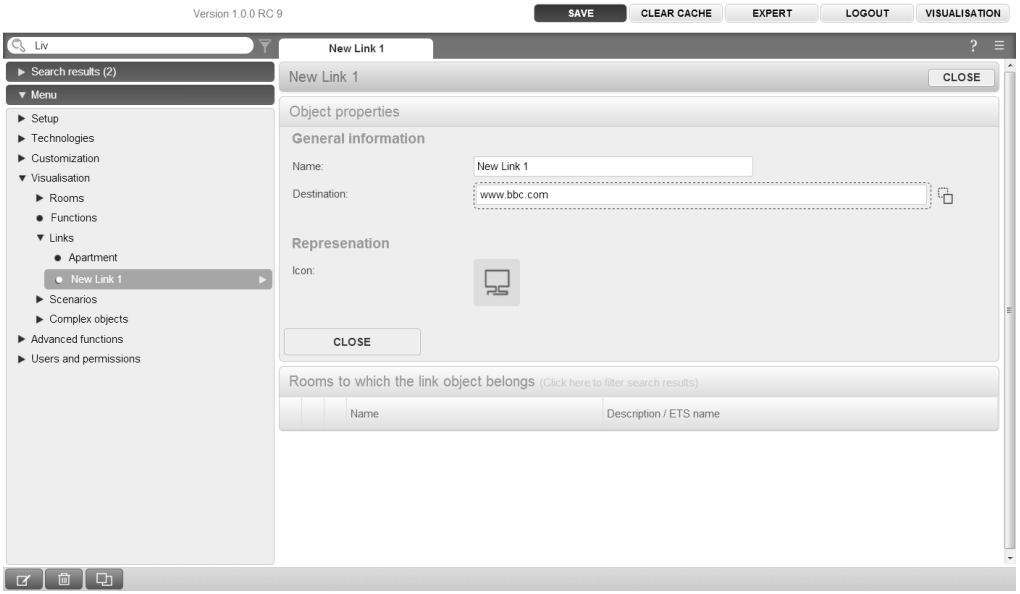


Now the following properties can be changed:

NAME	Name of the LINK inside the VISUALISATION
DESTINATION	Page that is shown as soon as the LINK is clicked; can either be a URL or a page of the visualisation, as explained below
ICON	Graphical icon, through which the LINK is displayed inside the VISUALISATION

The DESTINATION can be configured in 2 ways:
• Either a path (URL) to an IP address or a web page: in this case, just insert the address in the field
• Or a room of the visualisation: in this case just use the search function to drag the desired room into this field

In order to switch between the 2 methods, you can just click on the red button next to the destination field; it can either be a input field or a drop area (for connecting an object):



10.3 INTEGRATION INTO THE VISUALISATION

Once the link object has been created, it can be connected via Drag & Drop (using the search function) in the following ways:

→ Connection to a ROOM:
◦ open the properties window of the room
◦ locate the link object through the search function
◦ drag the link object to the section CONTAINED OBJECTS"

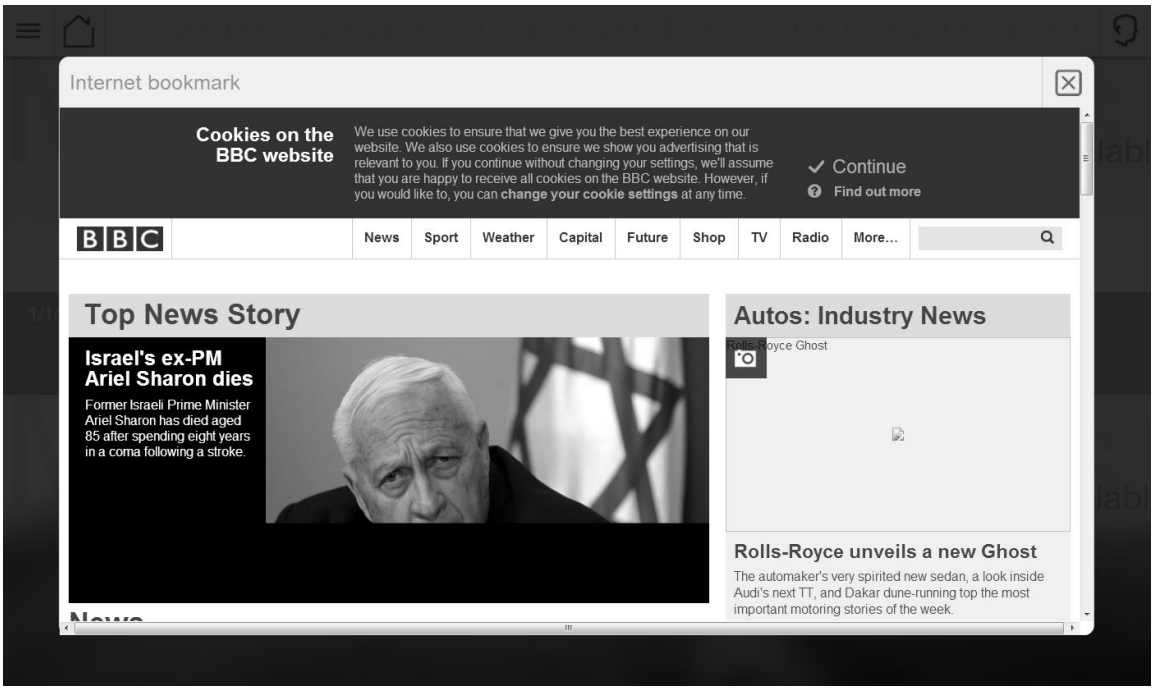
Or in alternative:
◦ open the properties window of the link
◦ locate the room through the search function
◦ drag the room into the section "Rooms containing the link"

→ Connection to the NAVIGATION MENU:
◦ open the entry „NAVIGATION MENU" in the menu "CUSTOMIZATION"
◦ locate the link object through the search function
◦ drag the link object to the desired position within the list of elements of the navigation menu

→ Connection to the FAVOURITES:
◦ open the entry „FAVOURITES" in the menu "CUSTOMIZATION"
◦ locate the link object through the search function
◦ drag the link object to the desired position within the list of elements of the favourites

10.4 HANDLING INSIDE THE VISUALISATION

After connecting the link object to one or more places of the visualisation, you can access it through the corresponding page (e.g. directly from the navigation menu or the HOME page). If the destination of the link object is a room, it will be opened as soon the link is clicked; URLs instead are opened using the browser plugin, as shown in the following screen-shot:


Internet bookmark
Cookies on the BBC website
We use cookies to ensure that we give you the best experience on our website. We also use cookies to ensure we show you advertising that is relevant to you. If you continue without changing your settings, we'll assume that you are happy to receive all cookies on the BBC website. However, if you would like to, you can change your cookie settings at any time.
Continue
Find out more
BBC
News
Sport
Weather
Capital
Future
Shop
TV
Radio
More...
Top News Story
Israel's ex-PM Ariel Sharon dies
Former Israeli Prime Minister Ariel Sharon has died aged 85 after spending eight years in a coma following a stroke.
Autos: Industry News
Rolls-Royce unveils a new Ghost
The automaker's very spirited new sedan, a look inside Audi's next TT, and Dakar dune-running top the most important motoring stories of the week.

11 ADVANCED FUNCTIONS

11.1 INTRODUCTION

In this chapter, the ADVANCED FUNCTIONS of U.motion KNX Server are explained in detail; they can be used to expand the functionality of the bus system. These functions are mostly invisible for the end user in the VISUALISATION and therefore accessible only through the ADMINISTRATION menu.

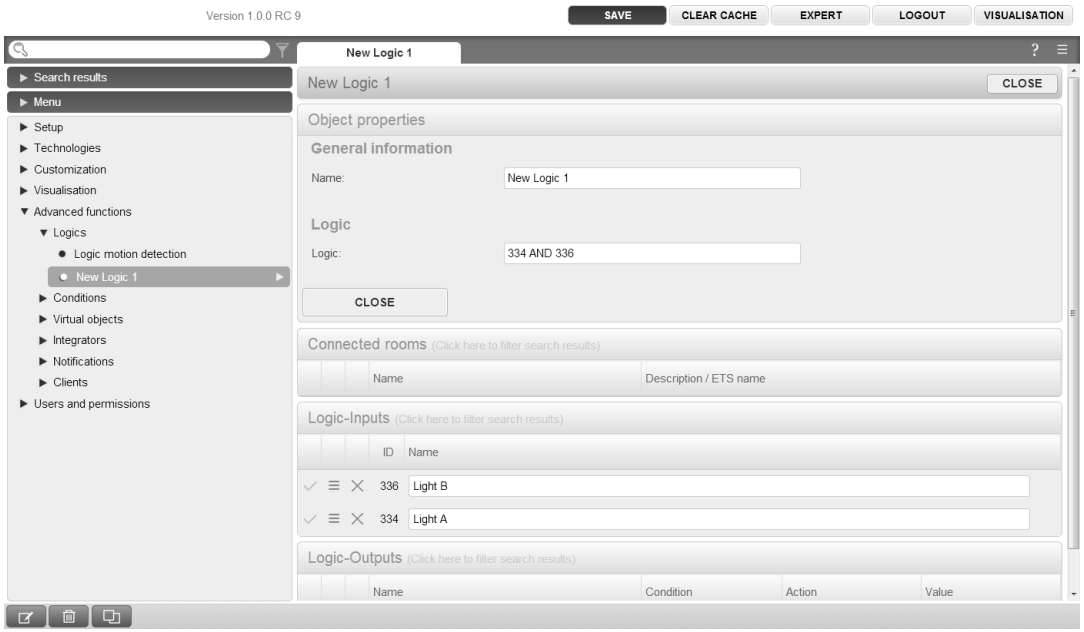
11.2 LOGICS

U.motion KNX Server offers the possibility to create LOGICS. These objects include logical expressions of type "AND" and "OR" between two or more objects of the software, where the result of such a LOGIC can in consequence command various other objects of the software.

For creating new LOGICS:

- Open the ADMINISTRATION area
- Select “ADVANCED FUNCTIONS“ → „LOGICS“
- Press the ADD button
- Access the configuration window of the LOGIC

In the area “LOGIC-INPUTS" all objects that should be evaluated in the logical expression must be added. Search for the desired objects with the search function and simply pull them into the area ("drag and drop"). For every item of this list a specific “ID” number will be shown. This number must be used to create the logical expression of the LOGIC:



When creating the logical expression the following points must be considered:

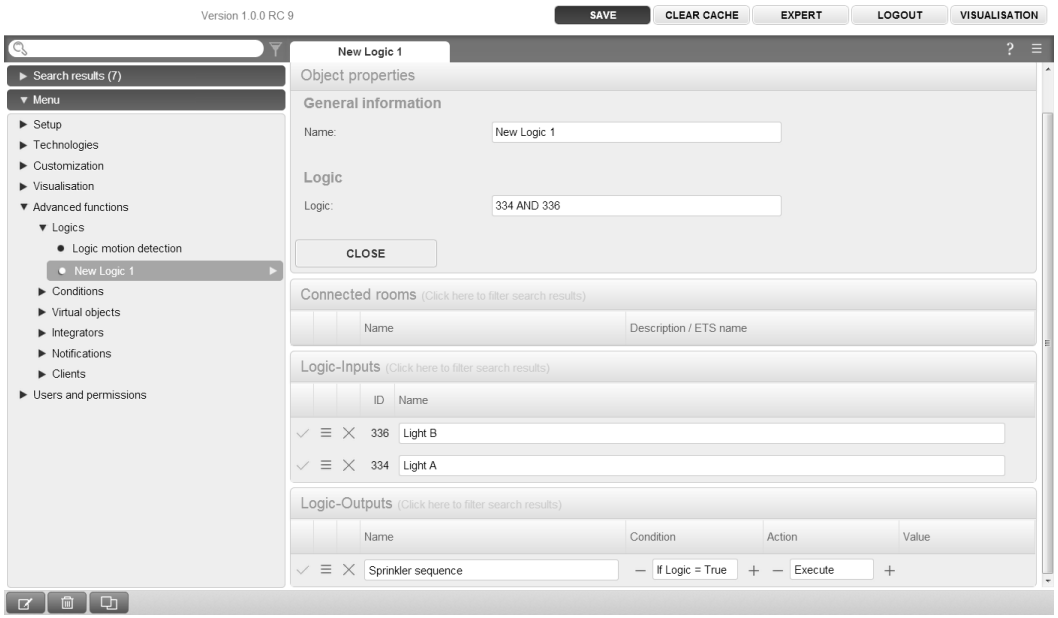
- The evaluation of a logical expression is always done pairwise. At start, the first two objects with the specified operator "AND" / "OR" will be evaluated. Then the results of this evaluation will be evaluated with the defined operator "AND" / "OR" with the third object and so on!
- The logical expression must be created by entering the objects "ID" concatenated among each other with a logical operator "AND" / "OR , all separated by a blank space; the logical operators must be written in capital letters.
- In order to invert an input object, the operator "NOT" must be written directly before the "ID" of the corresponding object, separated from the objects “ID” through a blank space; this operator must be written in capital letters, too.

Once a logical expression is configured in the LOGIC, at least one output object must be defined in the list “LOGIC-OUTPUTS”; otherwise the LOGIC will have no effect. At every status change of one of the defined input objects, the corresponding logical expression is evaluated and the defined output objects are set to the corresponding state.

To add new objects into the area "LOGIC-OUTPUTS", simply locate the desired objects with the search function and pull them into the area ("drag and drop"). Once all required objects are in the list, the actions to be performed for each object - depending on the result of the evaluated logic expression - can be defined:

CONDITION	Evaluation of the result of the logical expression ("If LOGIC = TRUE" or "If LOGIC = FALSE"). If the action should be triggered at every evaluation of the logic, please select "Every status change”.
ACTION	Action to execute on the object – differs depending on the type of the object
VALUE	Value, to which the object will be set, when the condition is fulfilled; (if for the parameter "ACTION" the corresponding option is selected and the object supports this functionality). If for the condition the option "Every status change" is selected, the output object can be set to the same value as the result of the evaluation of the LOGIC ("Value of ...") or also to its inverted value (“Inverted value of ...”).

Below an example showing how a scenario is launched through a LOGIC:

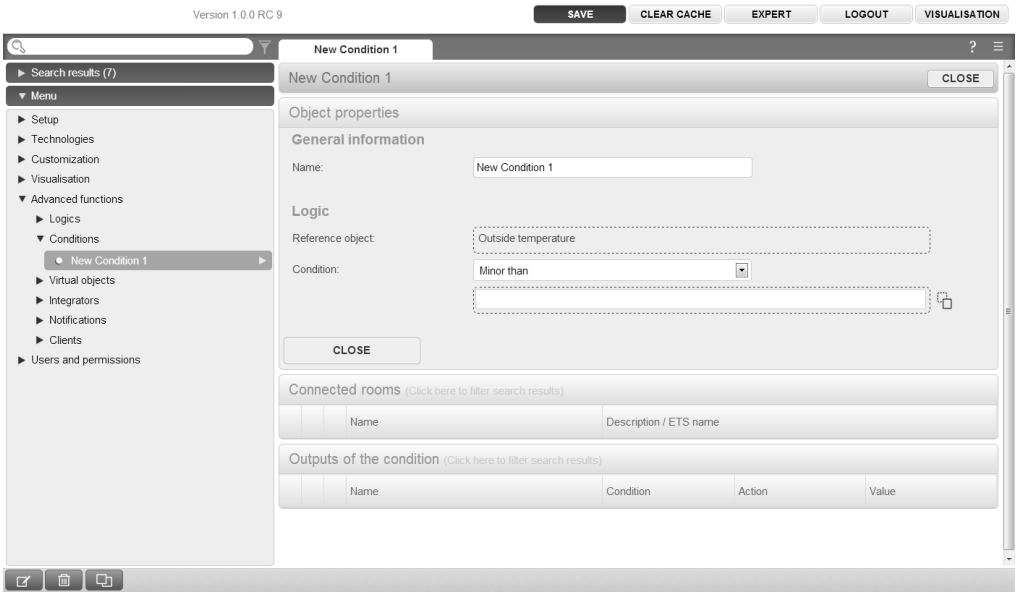


11.3 CONDITIONS

CONDITIONS are objects that permit to create value comparisons between one or more objects and can start events depending on the result of the comparison.

In order to create a new CONDITION, please follow the steps below:

- Open the ADMINISTRATION area of U.motion KNX Server
- Select “ADVANCED FUNCTIONS” → “CONDITIONS”
- Press the ADD button
- Access the configuration window of the CONDITION
- Enter a name for the new CONDITION



Now a REFERENCE OBJECT for the condition must be defined. Typically an object of the software is used for this purpose, that can be inserted into the corresponding field through drag&drop from the search engine.

When an object was draged into the red dashed drop zone, its name is shown inside.

Now the operator for the comparison of the condition must be defined. You can select between the following operators:

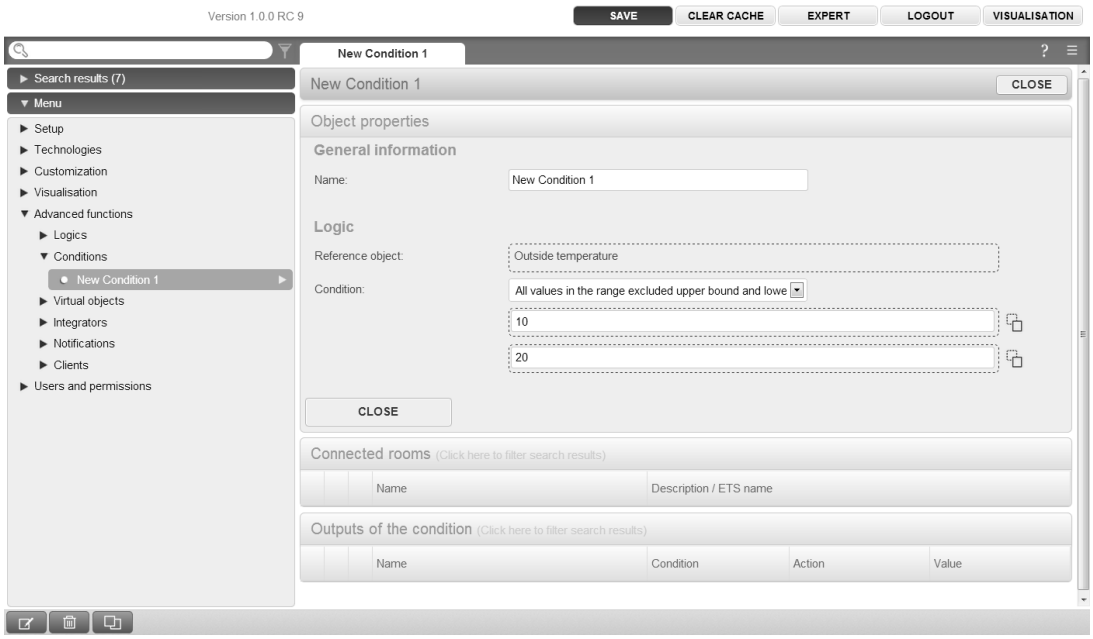
Condition operator	**Comparison values**
Minor	1
Minor or equal	
Major	
Major or equal	
Equal	
Condition operator	**Comparison values**
All values in the range, bounds included	2
All values in the range, bounds excluded	
All values not in the range, bounds included	
All values not in the range, bounds excluded	

Depending on the selected condition operator, either one or two comparison fields will be shown in which the values for the comparison must be entered. For each field it is possible:

- Test input mode to assign a numeric value (please use the dot as separator for decimal values)

- Or drop zone to drag another object into the field from the search engine

In this case the red button permits to switch between text input mode and drop zone.
In the second case the field will show the name of the object that has been dragged into the drop zone.



At every change of the reference object (or comparison object, if present) the condition will be evaluated and the connected actions will take place. The action, in case of CONDITIONS, always have to be ACTIVE EVENTS and are configured in the same way as already mentioned a few time within this manual („drag and drop“ of the objects to be controlled, directly from the search results).

11.4 VIRTUAL OBJECTS

The VIRTUAL OBJECTS are objects that exist only in the U.motion KNX Server software. These objects can be handled the same way as KNX objects, with the difference that VIRTUAL OBJECTS have no direct connection to the KNX bus (no KNX group addresses is connected to these objects). These objects can be used for various tasks: storing values, entering values for comparisons, displaying special status etc.

Since VIRTUAL OBJECTS are not included in the count of group addresses on U.motion KNX Server, they can also be used to keep the group addresses count on U.motion KNX Server low. This is very useful, if a lot of so-called “dummy” group addresses are present in the KNX project. Furthermore, VIRTUAL OBJECTS can be integrated in the VISUALISATION, connected to scenarios or events (passive as well as active) etc. Another example for the use of VIRTUAL OBJECTS is the creation of central functions, where a VIRTUAL OBJECT controls numerous KNX objects simultaneously.

To create a new VIRTUAL OBJECT, open the ADMINISTRATION menu, select "ADVANCED FUNCTIONS" → "VIRTUAL OBJECTS" and press the ADD-button; a new VIRTUAL OBJECT will be created, which offers the following settings:

NAME	Identifies the object inside the VISUALISATION
DESCRIPTION	Additional information that can simplify the search.
ICON	Graphical symbol through which the object is represented in the VISUALISATION. All symbols available for KNX objects are available also for this object; the choice of the corresponding icon is upon the user.
VALUE TYPE	The value type of the object can be defined here: • „Boolean“: can assume only the value „1“ or „0“ • „Numeric – Integer“: numeric value without comma • „Numeric – Float“: numeric value with comma • „String“: text

In the expert mode, the additional settings are available:

VISIBLE	Sets the object visible in the VISUALISATION or not.
WRITE ACCESS ACTIVE	Enables the commanding of the object in the VISUALISATION; if it is disabled it shows only the status of the object.
ENABLE PIN CONTROL NEW PIN REPEAT NEW PIN	Whit this option the room can be PIN-protected. To enable the PIN-protection the PIN has to be inserted into the field “NEW PIN” and in “REPEAT NEW PIN”.

11.5 INTEGRATORS

The INTEGRATORS enable the calculation of the time integral of objects present in the U.motion KNX Server database. For example it is possible to calculate for how long a certain light was in the status "ON"; the result of such an INTEGRATOR would be the time period (in seconds) for which the light was powered on.

To create a new INTEGRATOR, simply open the ADMINISTRATION menu, select “ADVANCED FUNCTIONS" → "VIRTUAL OBJECTS" and click on the ADD-button. The newly created INTEGRATOR provides the following options:

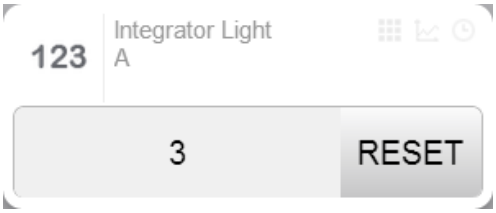
MEASURING UNIT	The measuring unit for the calculation (displayed also in the VISUALISATION) can be entered here
ICON	The icon, which will represent the object inside the VISUALISATION, can be selected here.
SCALE FACTOR	The value obtained from the object is multiplied by this factor. "1" should be entered here if no scaling of the obtained value in the calculation of the integral is desired or if you just want to obtain the time period (in seconds) as result of the integral. **Note**: When for the scale factor a decimal number is used, please use a dot as separator.
TYPE OF DATA	Defines if the result of the integral will be shown as numeric value with (“Real”) or without (“Integer”) comma.

Once all settings have been made, the object, whose value should be used to calculate the time integral, must be specified. Simply open the search function, locate the desired object and pull it into the area "INPUT OBJECT OF THE INTEGRATOR" ("drag and drop").

Only one object can be inserted into the list "INPUT OBJECT OF THE INTEGRATOR", since each INTEGRATOR can integrate only one value and not several values; if nevertheless is tried to add more objects into the area, a corresponding error message will appear.

Not all objects can be used for the calculation of an integral; if not compatible objects are pulled into the area "INPUT OBJECT OF THE INTEGRATOR", an error message will appear. For KNX objects it must be ensured that they are enabled for operation (write permission).

As soon as an INTEGRATOR is completely configured, it can be used inside the VISUALISATION, where it will appear as shown below:



If the RESET button is pressed, the calculated value shown in the INTEGRATOR will be set to zero and the time integral will restart calculating from beginning.

The calculation does not take place in real time, but periodically and whenever a value change of the object assigned to the INTEGRATOR is taking place. So if you want to check the function of an INTEGRATOR object, change the value of the reference object that was assigned to the INTEGRATOR.

Integrator objects can also be used to trigger events in dependence of the calculated value. The objects that should be controlled by such events can easily be inserted into the area "ACTIVE EVENTS".

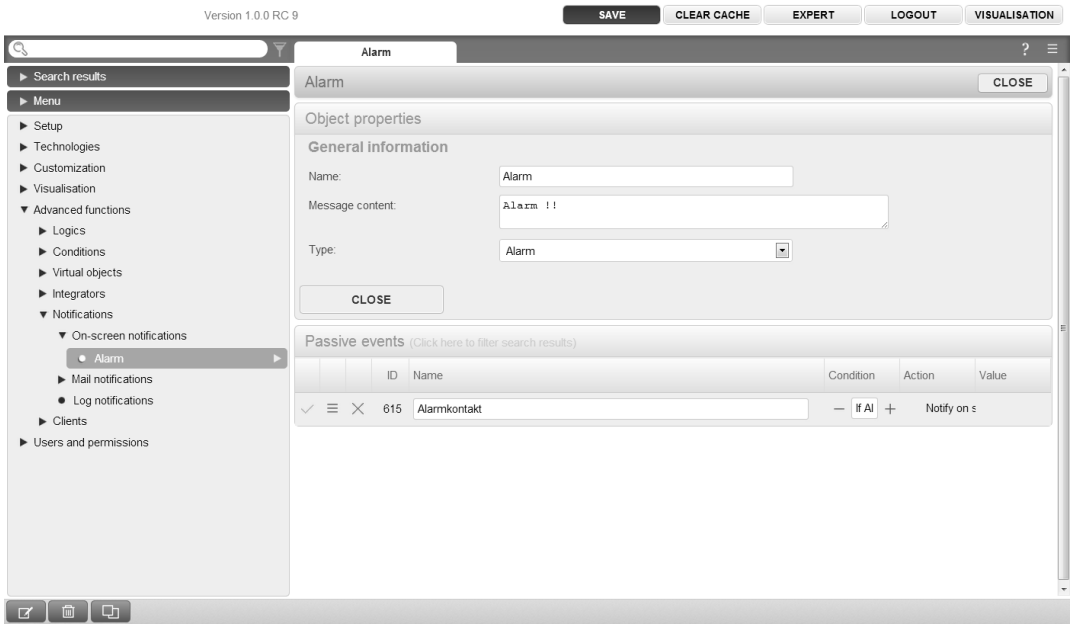
11.6 NOTIFICATIONS

NOTIFICATIONS are messages that U.motion KNX Server sends to one or more recipients, if the connected events take place. There are two types of notifications:

ON-SCREEN NOTIFICATION	These notifications are shown inside the VISUALISATION in a special pop-up window.
MAIL NOTIFICATION	These notifications are sent to the configured recipients through the configured SMTP server.

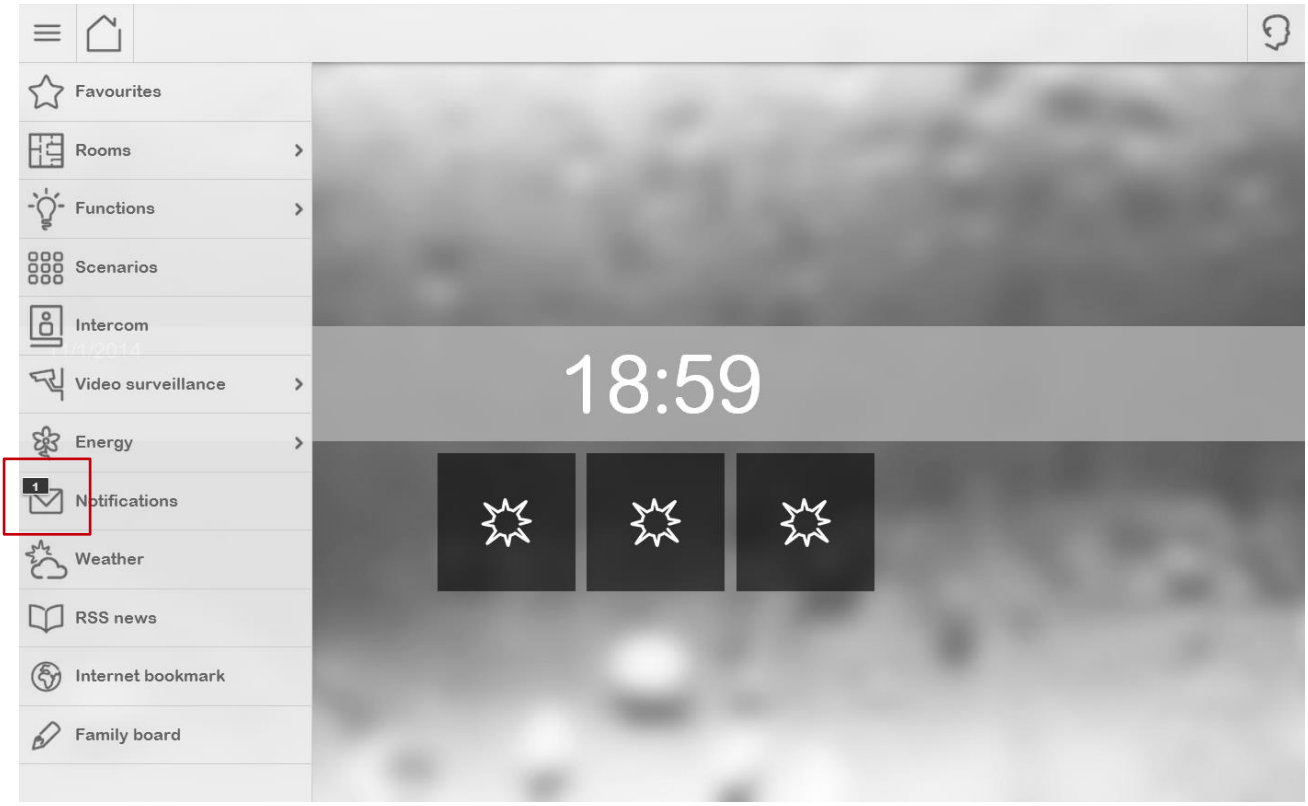
Depending on the notification type, you will see different settings. In the field "MESSAGE" the text must be entered, which the corresponding NOTIFICATION should contain.

If you create a new NOTIFICATION, at least one object must be configured that triggers the sending of the NOTIFICATION (active event in the configuration page of the corresponding object or passive event in the configuration page of the NOTIFICATION); if a NOTIFICATION is not linked to any event, it will never be displayed or sent. An example for an ON-SCREEN NOTIFICATION can be seen below:

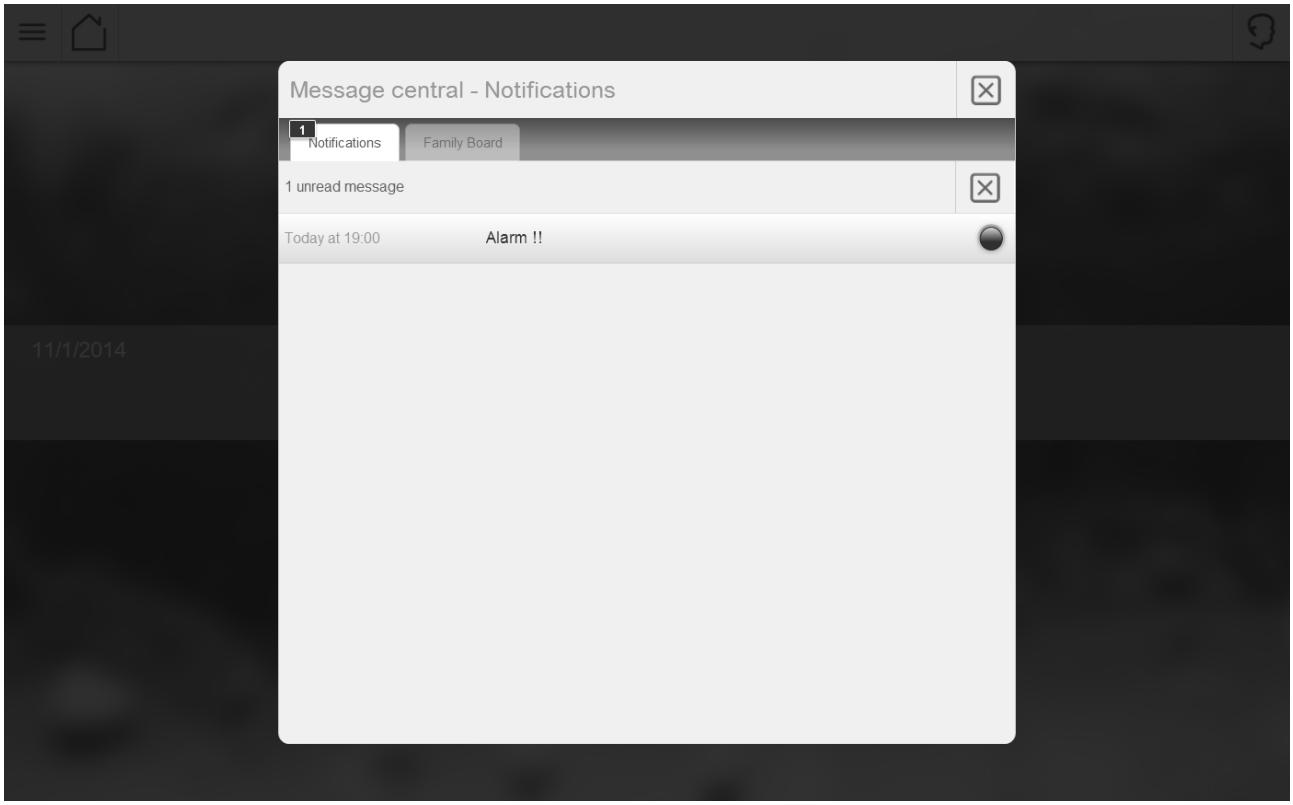


MAIL NOTIFICATIONS will always be re-sent, when the associated event is triggered by the corresponding object; U.motion KNX Server must be connected to internet in order to guarantee the MAIL NOTIFICATION functionality.

Since the ON-SCREEN NOTIFICATIONS are visible only inside the VISUALISATION, in the navigation menu of the VISUALISATION a corresponding icon will appear whenever new ON-SCREEN NOTIFICATIONS are available:



Individual NOTIFICATIONS can be consulted in a special popup window; the NOTIFICATION popup window will be opened when the NOTIFICATION-icon in the navigation menu of the VISUALISATION is clicked:



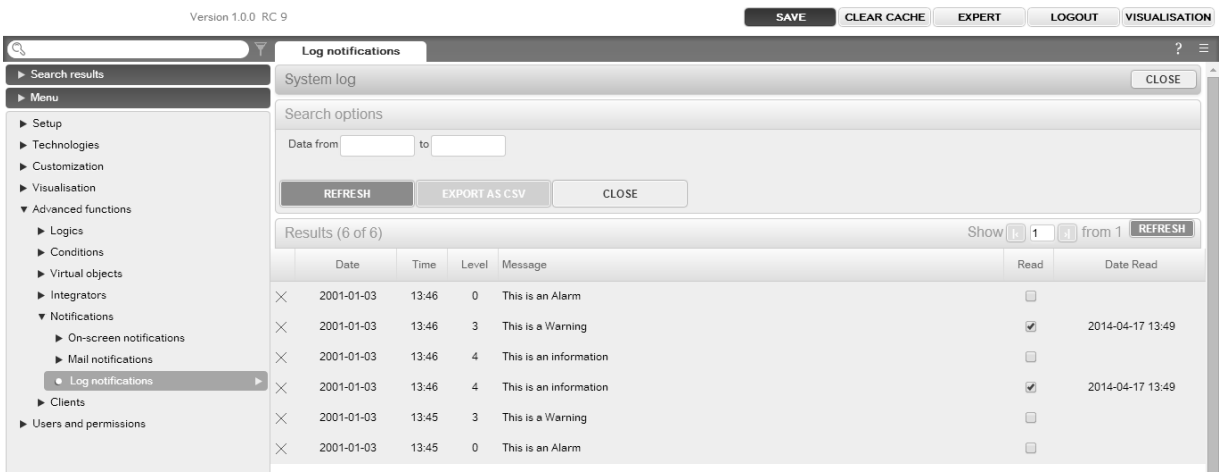
If the CONFIRM button of a single NOTIFICATION is pressed, the corresponding NOTIFICATION will vanish from the list of unread messages, but it will not be deleted from the U.motion KNX Server database. By pressing the DELETE-button, all existing NOTIFICATION will be confirmed and therefore disappear from the popup window.

Each ON-SCREEN NOTIFICATION can be combined with a specific priority ("alarm", "warning", "information"). Whether the NOTIFICATION popup window shall be opened automatically or not whenever a new NOTIFICATION with the appropriate priority is triggered, it can be configured in the ADMINISTRATION menu of U.motion KNX Server under "CUSTOMIZATION" → "OPTIONS" → "NOTIFICATIONS".

For more detailed information about the NOTIFICATION pop-up window, refer to the user's manual.

11.6.1 LOG NOTIFICATIONS

Any triggered on-screen messages is recorded and stored in the so-called system log. In the administration area the system log is available under the entry "LOG NOTIFICATIONS". Messages that have been read are not automatically deleted from the memory, and so still available in the system log.



For each message, the trigger time is displayed, and the time at which the message has been read. In addition it is possible to change the status of a message from "READ" to "UNREAD" or from "UNREAD" to "READ" through the corresponding checkbox.

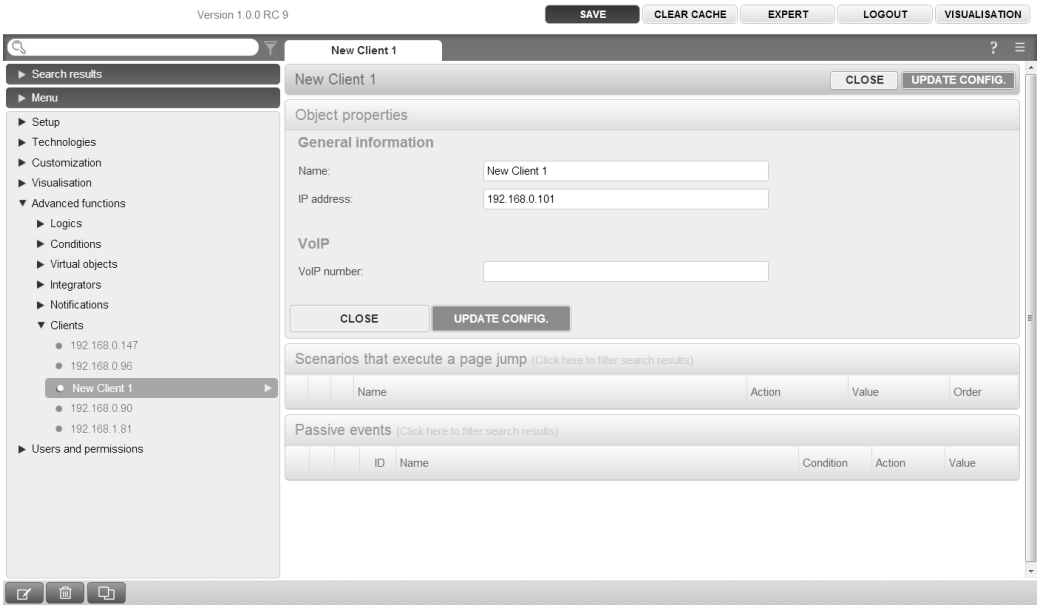
A date-based filter function allows filtering certain messages. Simply enter the start and end dates for the period of interest and update the result using the "UPDATE"-button.

The resulting messages in the lists can then be exported to a CSV file. Filter the the messages of the desired time period and then export them into CSV-file by using the button "EXPORT AS CSV".

11.7 CLIENTS AND PAGE JUMPS

For each device connecting to U.motion KNX Server via browser access (including U.motion KNX Server itself), an object of the type CLIENT is created within the software and automatically gets the IP address of the corresponding client device as name. These objects are used from U.motion KNX Server on one hand to make the same user's simultaneous access possible also from several client devices, and on the other hand offer also some additional functionality.

The section "CLIENTS" in the menu "ADVANCED FUNCTIONS" of the administration menu collects these objects, which are handled autonomously by the system and have their visibility set to “false” in normal case (therefore they are listed in gray). Of course they can still be selected and it is also possible to access their properties window just like with other objects:



The properties window of the CLIENT object offers the following parameters:

NAME	Label which identifies the CLIENT device. Normally this will be the IP address, but it can be modified for an easier recognition of the target device (e.g.: “touch bedroom”)
IP ADDRESS	IP address. Can only be modified on manually created objects.
VOIP NUMBER	A number can be assigned to the CLIENT device, over which it can be called from another place (like other client devices or eve IP phones). If this parameter is configured, the button "UPDATE CONF." must be clicked in order to save the changes. THIS FUNCTIONALITY CAN ONLY BE USED IN COMBINATION WITH U.motion KNX

	Server Plus! Further information can be found in the INTERCOM manual of U.motion KNX Server.

If the EXPERT mode is enabled, the visibility of the CLIENT object can also be set to “true”, in order to distinguish it from the non-used / unimportant CLIENT devices.

The CLIENT object can furthermore be used to trigger different actions in dependency of configurable events within the software:

- Execute a PAGE JUMP (either to a room of the VISUALISATION or to an external web page) on the selected CLIENT device.

In order to configure those actions, please follow the steps below:

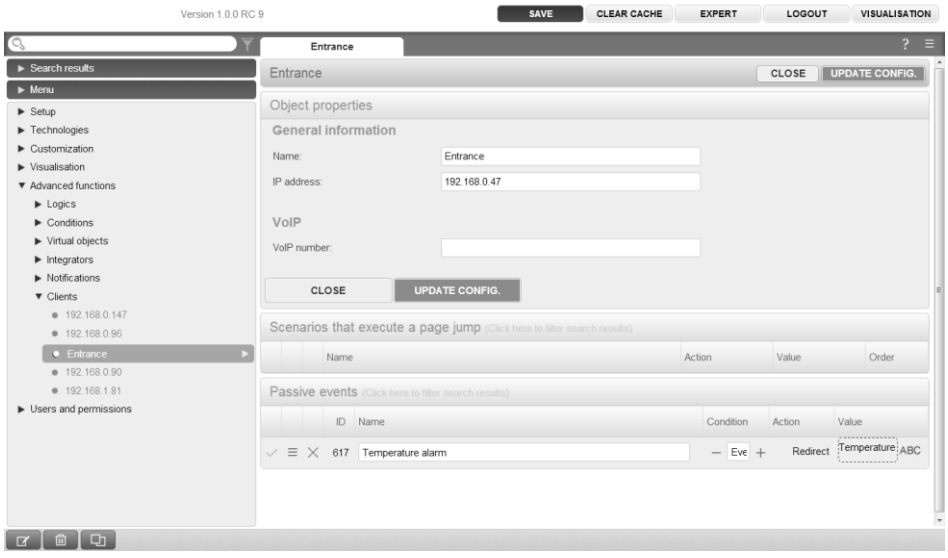
- Drag the object that should be triggering the action (like for example a KNX object) into the section „PASSIVE EVENTS“
- Define the CONDITION for which the action should be executed (the selectable values depend on the type of the connected object)
- The action will automatically set to “REDIRECT“ (PAGE JUMP).

In the column "VALUE" the following possibilities will be given

- Inserting the URL of an external web page (e.g. a homepage, web server contents, …)
- Selecting a room of the VISUALISATION

In the first case it is sufficient to input the complete address into the text box; in the second case, the text-box can be, as already seen with the CONDITIONS, transformed into a drop zone using the red button and therefore an arbitrary room can be connected via drag & drop.

The screenshot on the next page shows a sample configuration, in which a PAGE JUMP of the CLIENT device with IP address „192.168.0.47“ to the room „Temperature control“ should take place whenever the KNX object “Temperature alarm” is in alarm state:



In order that the PAGE JUMP can be executed correctly, the concerned CLIENT device of course must show a browser connected to U.motion KNX Server (or in the case of mobile devices, the connected app). Otherwise, the PAGE JUMP is ignored.

12 IP CAMERAS

12.1 INTRODUCTION

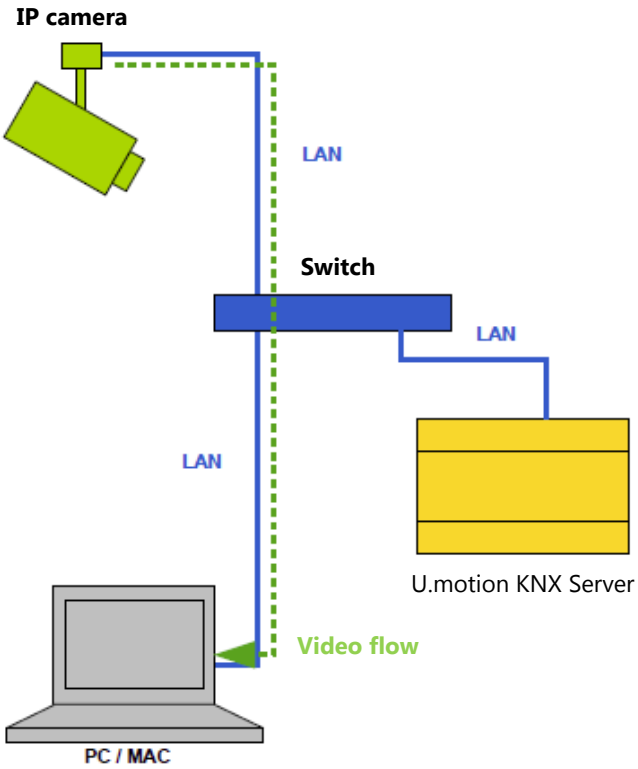
U.motion KNX Server permits to integrate the stream of one or more IP cameras / videoserver within the pages of the visualisation. The cameras can be reached through the corresponding entry inside the NAVIGATION MENU of the visualisation area. The following screenshot shows the representation of a camera:

U.motion KNX Server already offers an integrated support for different camera brands present in the market. When using such a camera, the integration of it can simply be done by configuring the core parameters of the camera. Furthermore, also cameras of different brands can be integrated by using a generic camera template; however, in this case you have to verify if the used camera offers its image in a supported way. Further information about this topic can be found on the following pages of this manual.

12.2 VISUALISATION IN LOCAL NETWORK

When the camera image should be accessed in the local network, a direct connection between the *Client* and the IP camera is created: U.motion KNX Server just adds a direct link to the IP address (and the port) of the camera to the pages of the visualisation, so that the browser can get the video stream directly from the camera. Therefore, the video signal must not pass through U.motion KNX Server, what guarantees the best performance and spares the resources of U.motion KNX Server.

The following graphic shows the video flow within the local network:

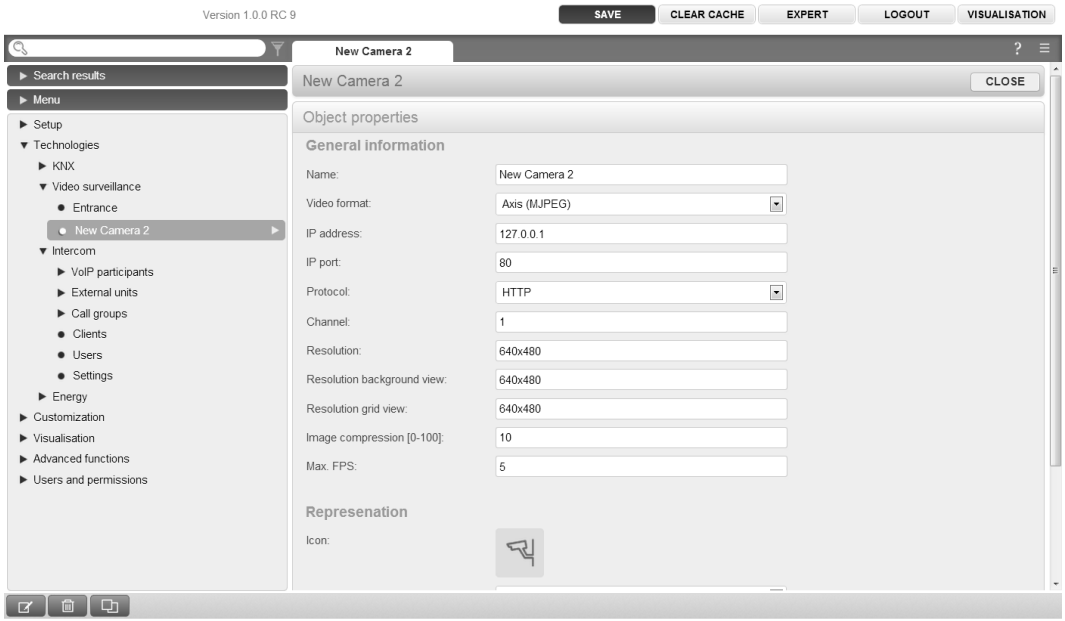


12.3 AXIS CAMERAS AND VIDEOSERVER

U.motion KNX Server offers native support for all cameras and videoserver of the brand AXIS; further details on the available models as well as the product catalogue can be found on http://www.axis.com.

In order to configure an AXIS camera / videoserver in U.motion KNX Server, please follow the steps below:

- Please access the configuration area of U.motion KNX Server
- Please select "TECHNOLOGIES" → "VIDEO SURVEILLANCE"
- Click on the ADD button to create a new camera and access its configuration window through the EDIT function
- Please select "AXIS (MJPEG)" as video format:



- Please select "AXIS (MJPEG)" as video format:

IP ADDRESS	Local IP address of the camera / videoserver
IP PORT	IP port through which the video stream can be accessed. Please select port 80 for the HTTP protocol or 443 for the HTTPS protocol, except the camera is using a special configuration
PROTOCOL	Please select HTTP or HTTPS, depending on the port number specified before (normally HTTP)
CHANNEL	Number of the channel transferring the video signal; please only specify a value when you are using a videoserver with more than one channel (in this case, for each channel of the videoserver a camera object has to be created)
RESOLUTION	Please specify the resolution of the camera signal that U.motion KNX Server should request from the camera The supported resolutions can be found within the manual or configuration menu of the used camera / videoserver.

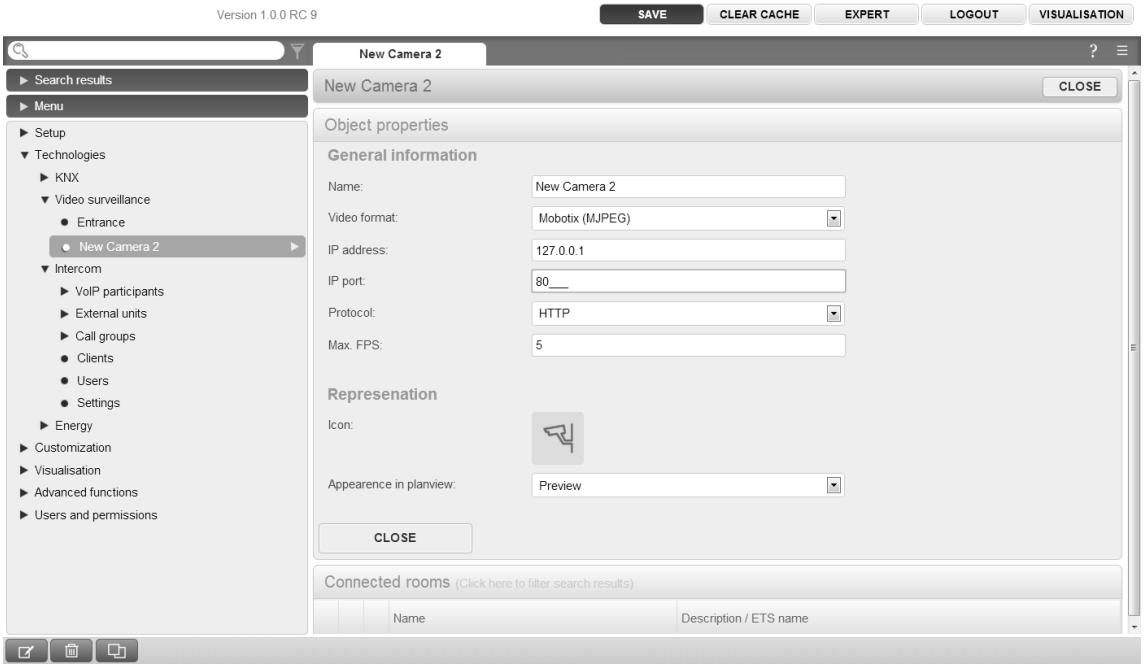
IMAGE COMPRESSION [0-100]	Allows to define the desired image compression.
MAX. FPS	The maximal frame rate (frames per second) can be defined here, that should be used to reproduce the video.
APPEARANCE IN PLANVIEW	Camera objects can also be used in rooms. With this setting can be defined how a camera object should be shown inside a room in BACKGROUND mode: • **ICON**: The camera is shown only as icon. if the icon is clicked the video stream is shown in a popup window. • **PREVIEW**: The camera object is shown as window with the video stream inside. Like a preview; the size can be adapted as needed. If you click inside the video window, a popup window with the video stream inside will be opened.

12.4 MOBOTIX CAMERAS

U.motion KNX Server offers native support for all cameras of the brand MOBOTIX; further details on the available models as well as the product catalogue can be found on http://www.mobotix.com.

In order to configure a MOBOTIX camera in U.motion KNX Server, please follow the steps below:

- Please access the configuration area of U.motion KNX Server
- Please select "TECHNOLOGIES" → "VIDEO SURVEILLANCE"
- Click on the ADD button to create a new camera and access its configuration window through the EDIT function
- Please select "MOBOTIX (MJPEG)" as video format:



- Now configure the following parameters:

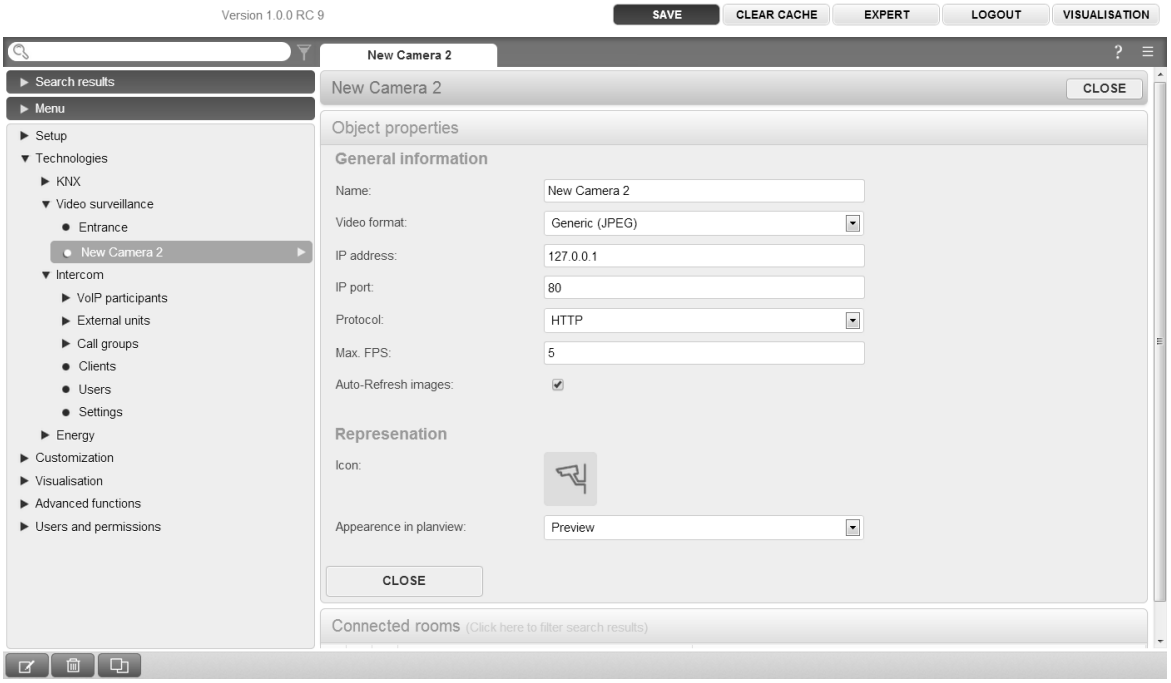
IP ADDRESS	Local IP address of the camera / videoserver
IP PORT	IP port through which the video stream can be accessed. Please select port 80 for the HTTP protocol or 443 for the HTTPS protocol, except the camera is using a special configuration
PROTOCOL	Please select HTTP or HTTPS, depending on the port number specified before (normally HTTP)
MAX. FPS	Enter here the maximal frame rate (frames per second), that should be used for the VISUALISATION of the video image
APPEARANCE IN PLANVIEW	Camera objects can also be used in rooms. With this setting can be defined how a camera object should be shown inside a room in BACKGROUND mode: • **ICON**: The camera is shown only as icon. if the icon is clicked the video stream is shown in a popup window. • **PREVIEW**: The camera object is shown as window with the video stream inside. Like a preview; the size can be adapted as needed. If you click inside the video window, a popup window with the video stream inside will be opened.

12.5 GENERIC VIDEO FORMAT (JPG)

U.motion KNX Server at last offers the possibility to request single JPG images from an IP camera / videoserver. In this case U.motion KNX Server refreshes the images automatically at the maximum speed allowed by the network and creates its own video stream: the next image will be loaded as soon as the current image finished loading. This method, even if not so performant and fluid as the methods described before, has the great advantage of its universal usage: the camera / videoserver must only offer a path to the still image of its video signal. Furthermore, this method can used to display the camera signal also on mobile devices.

In order to configure a JPG stream, please follow the steps below:

- Please access the configuration area of U.motion KNX Server
- Please select “TECHNOLOGIES” → “VIDEO SURVEILLANCE”
- Click on the ADD button to create a new camera and access its configuration window through the EDIT function
- Please select “Generic (JPEG)” as video format:



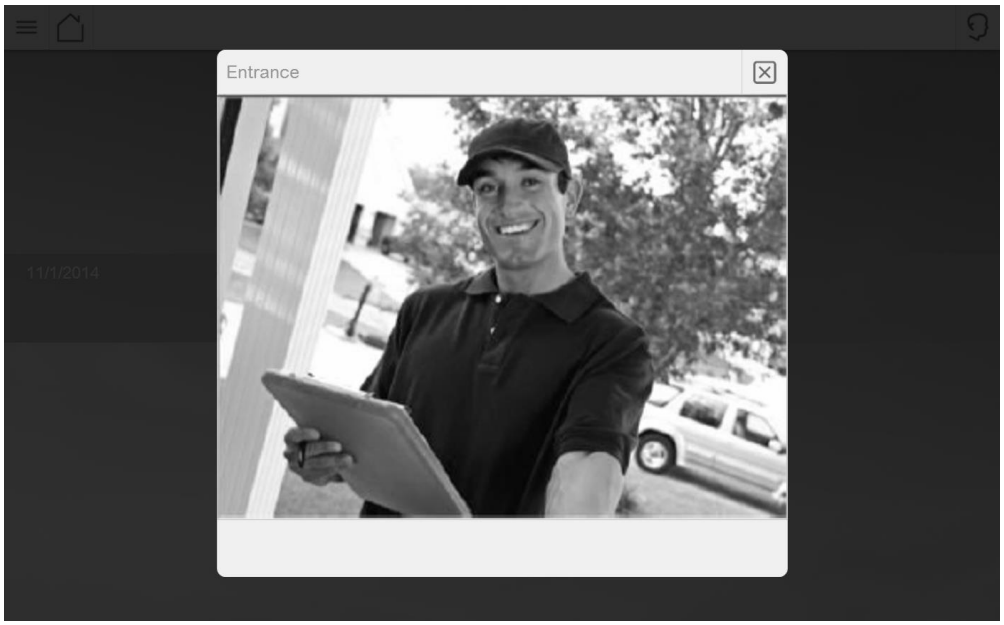
Since the JPG format is a generic format, the configuration window will show all parameters listed in the last chapters. Depending on the configuration of the used camera, single parameters can be necessary or not. The field “IP ADDRESS” in any case must contain the path to the still image (without prequel http://)!

12.6 VISUALISATION

Once the camera objects have been configured as described in the last chapters, they can be implemented in the visualisation area in 2 different ways:

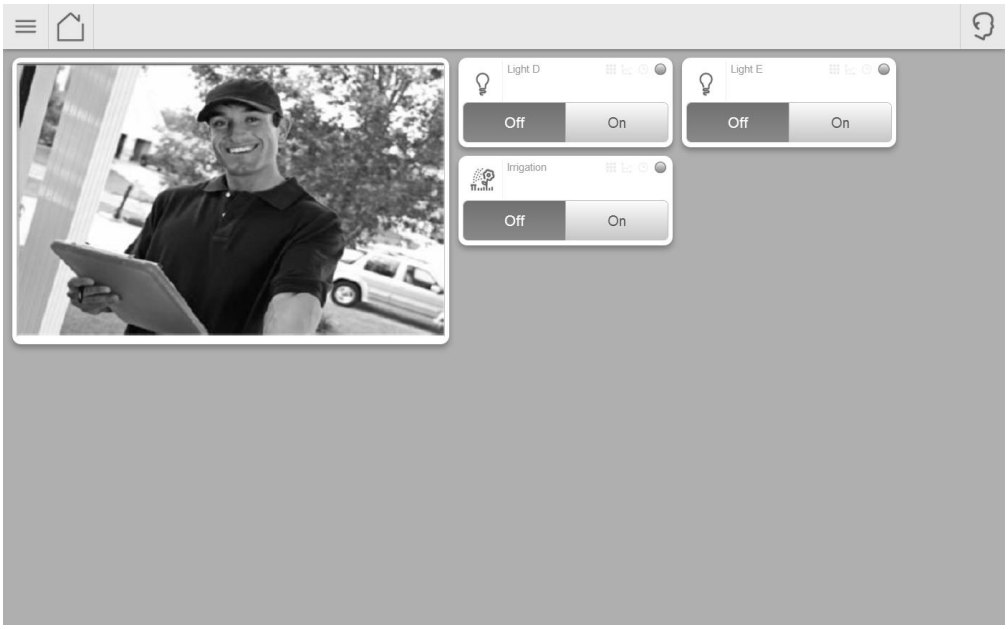
- Either using the pre-configured menu entry “VIDEO SURVEILLANCE” in the NAVIGATION MENU
- Or within rooms, as wells in GRID view as also in BACKGROUND view

The first implementation method is created automatically by the software. If the entry “VIDEO SURVEILLANCE“ is opened, a list of the configured cameras will be shown; a click on one of the listed entries will open a popup window showing the camera stream, as visible in the screenshot below:



If the cameras are also inserted into one or more rooms, their signal can also be shown directly inside the pages of the visualisation.

If the room was created using the GRID view template, the camera is shown together with the "function boxes" of the other objects, with the difference that the camera object takes the place of 6 normal objects (3 rows, 2 columns), as shown in the screenshot on the next page:



Depending on the resolution of the *Client,* the other objects are places around the video signal, occupying the free space on the right and bottom side of the video box.

Since the objects are placed on the RIGHT and BOTTOM side of the video box, it is recommended that the video box is placed in the FIRST column of the page. Otherwise on the left side an empty, not usable space will be shown. Therefore, the ORDER of the objects within the room should be adapted: if the camera object is placed on TOP of the contained objects list, it is assured that the video box will be placed at the first position in the GRID view and the empty space will be filled correctly with the remaining objects.

If the room uses the BACKGROUND view template, the video box can be freely positioned, as all other objects, too. Compared to other objects, which have a fixed size, the video box can also be resized in order to fit perfectly into the visualisation page. The screenshot on the following page shows an example of a room with BACKGROUND view and integrated camera:

As visible in the screenshot, it is also possible to place objects directly on top of the video signal[2]. In this case, when clicking on an object, the corresponding action will be executed; when clicking on the video signal, the camera stream will be shown in a popup window, showing the resolution that was specified in the settings of the camera object.

In order to place objects on the video signal, they must have a lower ORDER than the video signal. This means that in the configuration window of the room, the objects must be shown ABOVE the video signal. Only in this case objects can be placed on top of the video box. You can change the ORDER of the objects by using the MOVE button and dragging the objects to the desired position.

A nice graphical effect can be created by using camera objects in combination with KNX objects with a TRANSPARENT symbol (available only for ON/OFF objects). In this case, a transparent object can be placed on top of a real object displayed in the camera image (e.g. a lamp); is this transparent area is clicked, the lamp will turn on, which will be shown directly through the camera image, without needing a symbol for the representation of the state.

In both named visualisation methods it is possible to add more than one camera objects per page. Nevertheless it is not recommended, since the camera signals can have a significant impact to the performance of the *Client* and therefore can slow down the whole VISUALISATION.

[2] Not all video signals support that objects are placed on top. Especially video signals that require a plugin for their correct visualisation are always shown in the top layer of the browser, independently from the settings of U.motion KNX Server. In this case, no objects can be placed on top of the video signal, but can only be placed in the remaining free space of the room.

13 ENERGY MANAGEMENT

13.1 INTRODUCTION

This chapter explains in detail how to log and display energy consumption in U.motion KNX Server. For being able to measure energy consumption, appropriate KNX devices must be installed in the system and integrated in the ETS project of the system.

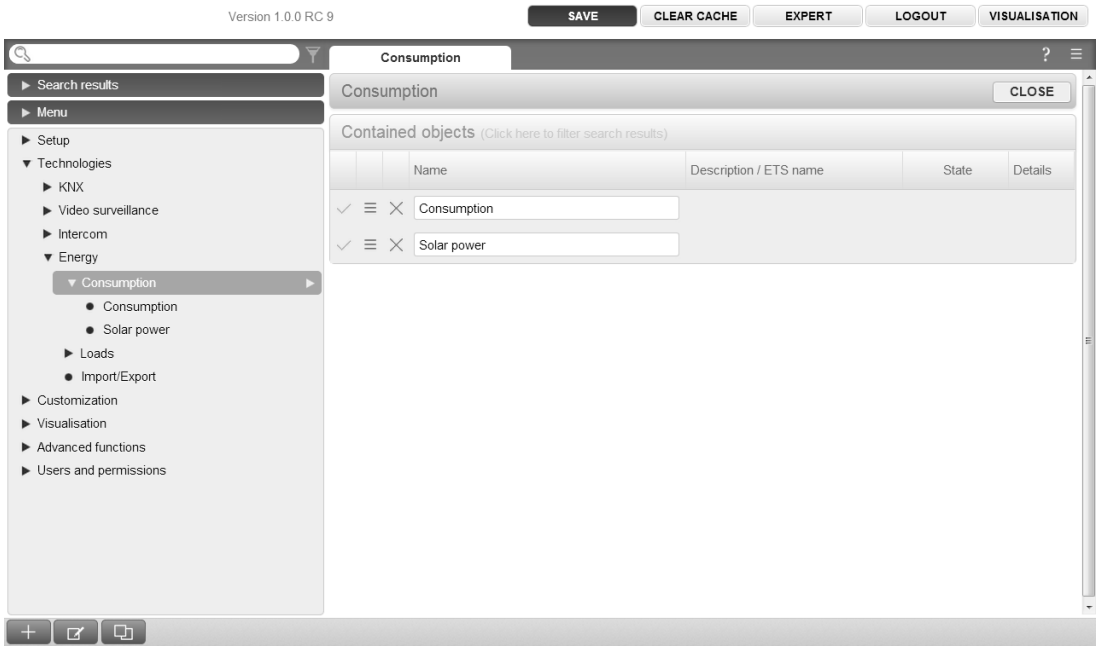
In order to configure the energy management features, please access the section „ENERGY“ within the menu „TECHNOLOGIES“ in the configuration area of U.motion KNX Server.

13.2 SECTIONS

The ENERGY MANAGEMENT is structured in different sections. Each section is assigned to a special aspect of the energy consumption of a building:

CONSUMPTION	This page shows a summary of the generic energy consumption and energy production (photovoltaic) of a building using ENERGY COUNTER objects.
LOADS	Shows the energy consumption of configured energy loads in real-time and permits to turn off/on loads depending on configurable logics

If you open the configuration page of the "ENERGY“ entry, the order of the different sections can be changed; in EXPERT mode it is also possible to define whether a section should be visible in the VISUALISATION or not:



13.3 CONSUMPTION

13.3.1 CREATION OF A NEW ENERGY COUNTER

After selecting the entry "CONSUMPTION" from the "ENERGY" menu, one or more objects of the type ENERGY COUNTER can be created. These objects basically are a special type of COMPLEX OBJECTS, optimized for the visualisation of energy values received from a KNX counter hardware. Furthermore, these objects can also be used as reference objects for the load control functionality, which will be explained in the further chapters of this manual.

After the creation of a new ENERGY COUNTER you can access its properties window, just like for every other object, too. The following parameters can be configured:

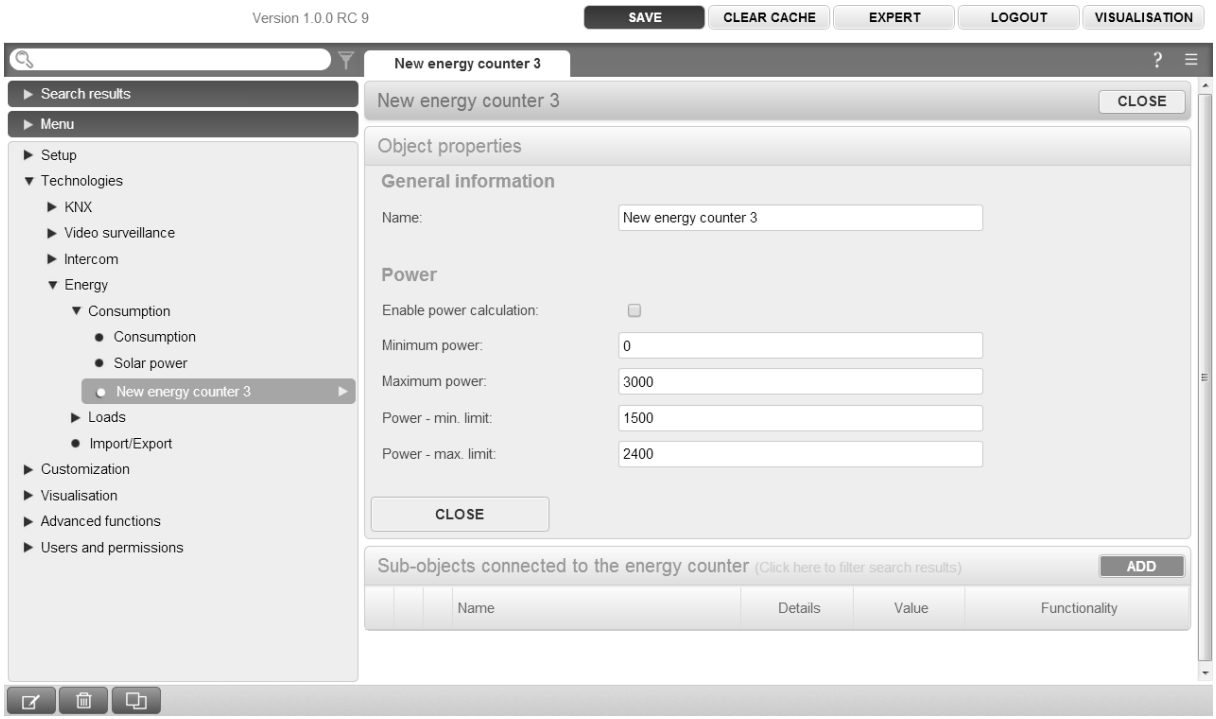
POWER

ENABLE POWER CALCULATION	If this checkbox is enabled, the calculation of the power consumption is done using the received current and voltage data. In this case, in the lower area of the properties window the section „SUB-OBJECTS FOR POWER CALCULATION" will appear, which is explained more in detail on the following pages.
MINIMUM POWER MAXIMUM POWER	These values define the maximum and minimum power consumption, through which the percentage values of the current power consumption are calculated and shown in the graphical display of the object.
MAX. LIMIT POWER MIN. LIMIT POWER	These thresholds determine on one side the graphical representation of the power values within the VISUALISATION, on the other side can also be used by the load control (if the ENERGY COUNTER is used for that purpose).
LIMIT 1 POWER LIMIT 2 POWER	These levels define how the energy counter is shown in the VISUALISATION; on the other hand they are used for the load control (if the energy counter is used for that), The energy counters change color depending on the shown value: • Measured power < Limit 1: GREEN • Limit 1 < Measured power < Limit 2: ORANGE • Limit2 < Measured power: RED

GRAPHS

SCALE FACTOR	Permits to define a scale factor through which the representation of the selected graph can be adapted Default: 1
UNIT	Permits to define a measuring unit, which is shown behind the energy values within the graph
SHOW DATA IN GRAPH	If this option is selected, the data of the ENERGY COUNTER will be shown in graph form, depending on the time period selected by the user (check out next chapter for further details)
SHOW COMPARISONS IN GRAPH	If this option is selected, in addition to the base graph also the calculated average value, depending on the time period selected by the user, is shown
SHOW RANGE IN GRAPH	If this option is selected, in addition to the base graph also the range between minimum and maximum value of the ENERGY COUNTER, always depending on the time period selected by the user, is shown as colored area

The section "GRAPHS" will only be visible if a sub-object of type POWER is connected to the ENERGY COUNTER. This will be explained more in detail in the next chapter.



All of these parameters can be overwritten by sub-objects that can be added to the ENERGY COUNTER. The parameters of such an object therefore must not be of static nature, but can also be changed dynamically, for example through

inputs of the user (using VIRTUAL OBJECTS), received values of KNX OBJECTS etc. For this section, the following actions are available:

- Creation of a new sub object directly through the ADD button. In this case, a VIRTUAL OBJECT is created and connected to the counter. Take care, this object doesn't have any own function after its creation; this must be defined - if necessary - by creating events within the properties window of the object.
- Connection of an existing object (e.g. KNX object) via drag & drop from within the search function

In both cases it is necessary to assign to the connected objects a FUNCTIONALITY within the counter. The following options are available:

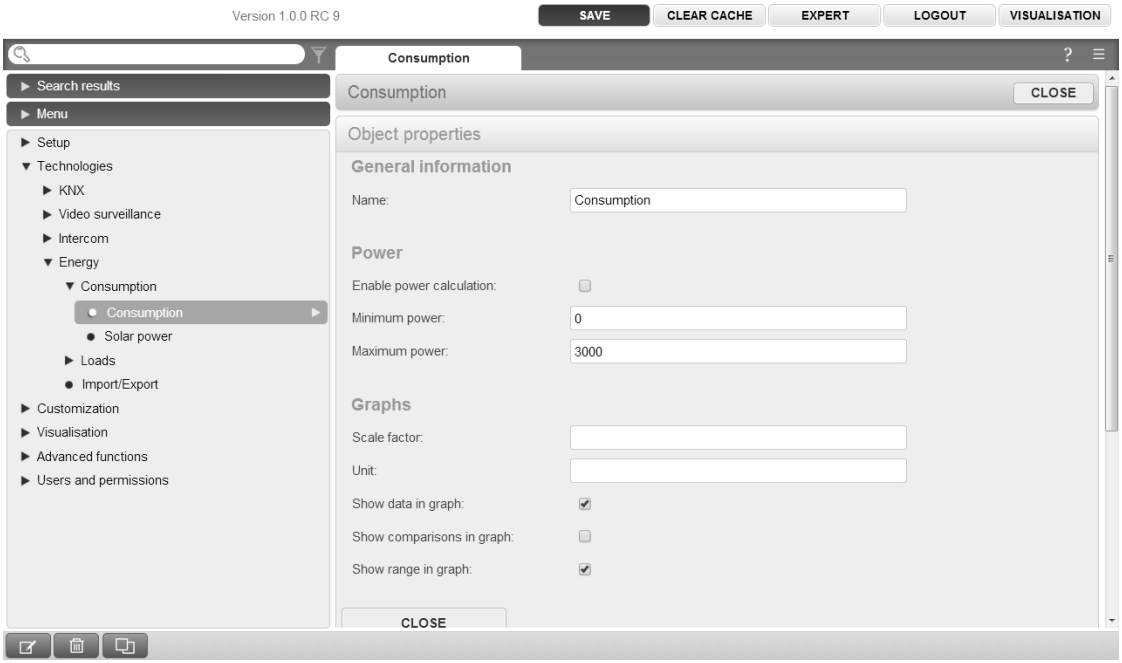
POWER – MEASURED VALUE	Electrical power measured by a KNX network analysis device, typically provided through a KNX object.
POWER – MIN. LIMIT POWER – MAX. LIMIT	Thresholds determining the graphical representation of the power values within the VISUALISATION (can also be used by the load control if the ENERGY COUNTER is used for that purpose). *Note: if these functionalities are used, previously entered static values (as explained before) will be ignored and hidden from the properties page.*
LOAD OVER LIMIT	ON/OFF object that is triggered automatically when the limits are exceeded (only when the load control is active, check out next chapter).
LOAD PRIORITY	Priority of the load, used for switching on/off when load control is active (check out next chapter).
LOAD ON OFF LOAD AUTO/MAN	Please use this functionalities only if the ENERGY COUNTER is used for active load control (check out next chapter)

The selection of a FUNCTIONALITY also automatically determines the graphical aspect of the related object as well as its representation in the VISUALISATION. Consequently, no further alterations / adaptations of the connected objects are necessary.

This lastly described feature accelerates the configuration of the ENERGY COUNTERS enormously and offers, especially in cases where no corresponding KNX object is available (for example for limit adjustment), the possibility to get the desired result fast by using VIRTUAL OBJECTS.

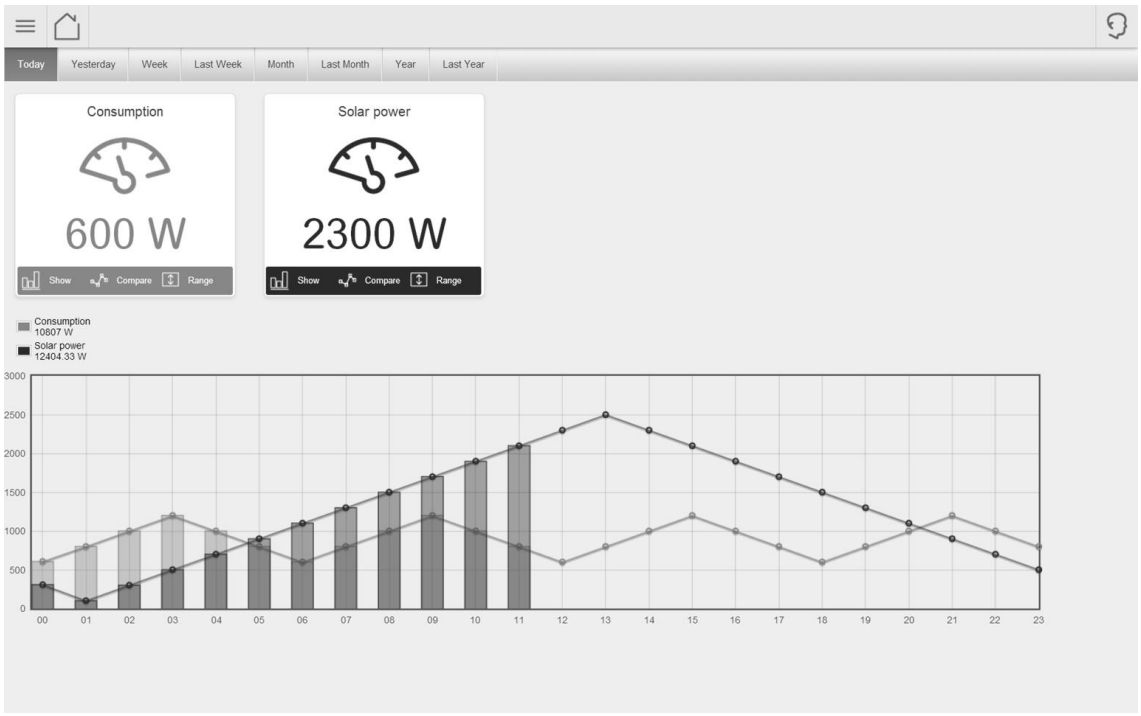
Some FUNCTIONALITIES allow a value input directly within the configuration area; this for example applies for the limit values. This accelerates the configuration again and furthermore it is possible to insert already default values for the end customer (who can naturally adapt the values at any time in the VISUALISATION).

The following screenshot shows the configuration of an ENERGY COUNTER with connected sub-objects:



13.3.2 REPRESENTATION IN THE VISUALISATION

In the VISUALISATION it is possible to access the consumption values by selecting the entries “ENERGY” -> “CONSUMPTION” from the NAVIGATION MENU:



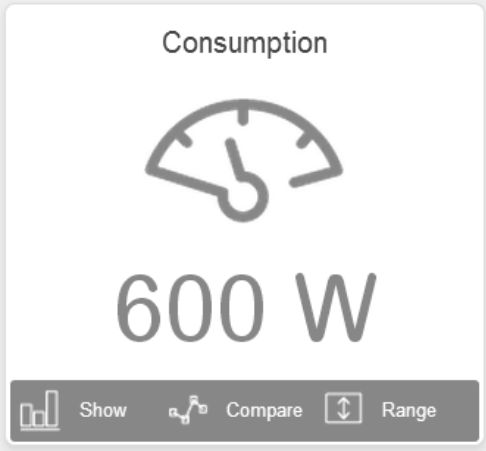
In the upper area of the page, one or more ENERGY COUNTER are shown. They show the current power consumption in real time. The color (green - orange - red) of the power value indicates graphically when the configured limits are

exceeded. If the limits were not configured in a static way, but using sub objects, you can click on one ENERGY COUNTER to open the following pop-up window, which provides the possibility to change the limits gives access to the configurable parameters, which are organized in different TABS:

The sub-objects are (if present) arranged in the following tabs:

- Load control (priority, load over limit...)
- Power(min. and max. limits)
- Energy (min. and max. limits)

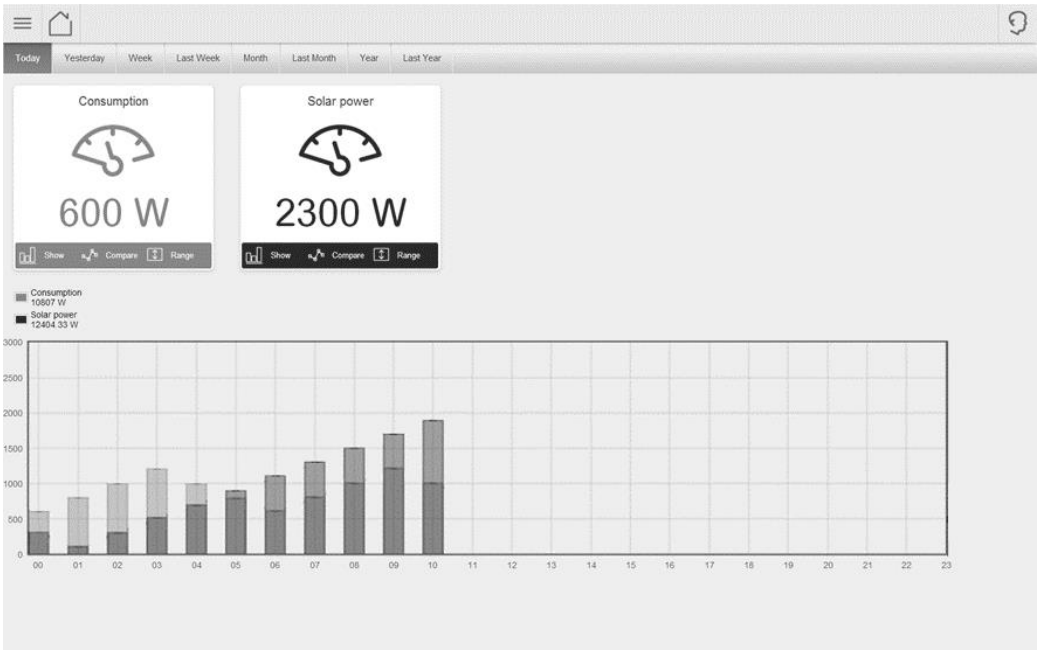
In each ENERGY COUNTER a colored box can be seen, which allows the visualisation in graphical way of the data of the connected ENERGY COUNTER. The graphs are shown in the lower part of the page:



The color of the box is the same as the one of the corresponding graph, what permits to easily recognize it even when more than one graph is visualised. Furthermore, the box permits to change some options of the graphical representation of the shown data:

SHOW	Shows / Hides the graph of the corresponding energy counter
COMPARE	Shows hides the comparison values, which are calculated from the average value of the lastly measured values
RANGE	Shows / Hides the colored area which marks the range between the minimum and maximum values of the energy counter (in dependence of the selected time period)

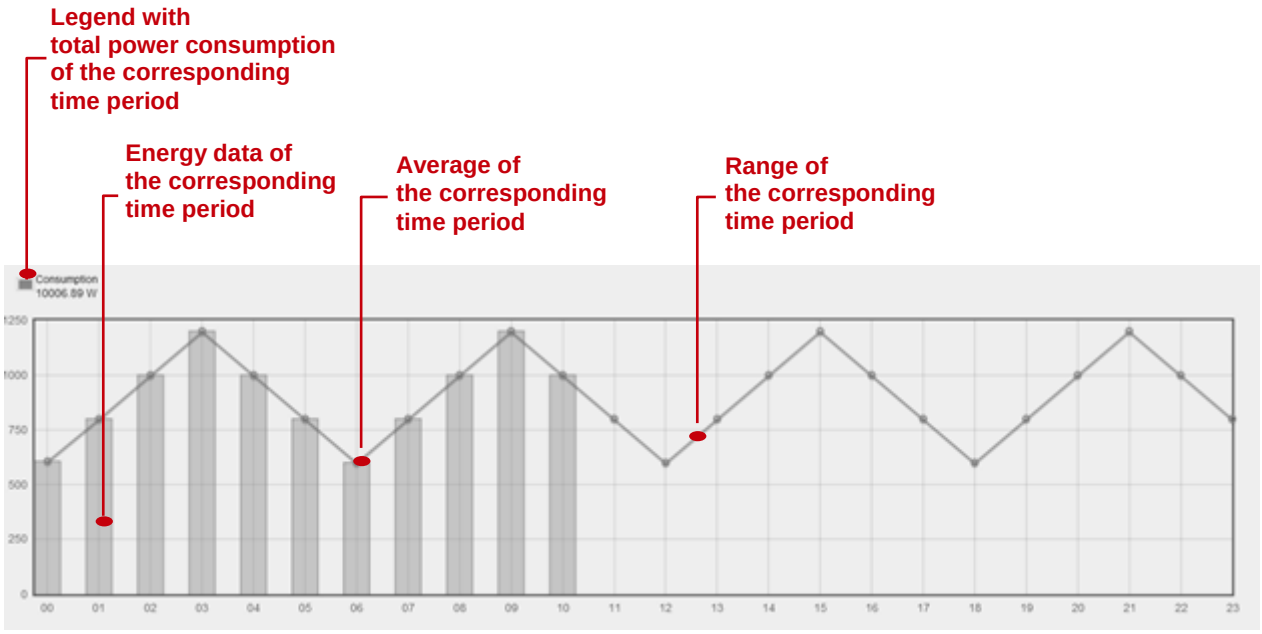
The following screenshot shows an example, in which the options “COMPARE” and “RANGE” have been disabled; in this case, only the real energy values are shown:



The lower area of the page contains the graphs of the single energy counters (batteries) from the upper area. The data shown in the graphs always refers to a certain time period, which can be selected by the user through the different TABS on the top of the page:

TODAY	Data of the current day (from 00:00); the comparison value – if enabled – is calculated from the average of the daily values logged
YESTERDAY	Data of the previous day; the comparison value – if enabled – is calculated from the average of the values logged the previous day
WEEK	Data of the current week (from Monday, 00:00); the comparison value – if enabled – is calculated from the average of the weekly values logged
LAST WEEK	Data of the previous week; the comparison value – if enabled – is calculated from the average of the values logged the previous week
MONTH	Data of the current moth (from the first day, 00:00); the comparison value – if enabled – is calculated from the average of the monthly values logged
LAST MONTH	Data of the previous month; the comparison value – if enabled – is calculated from the average of the values logged the previous month
YEAR	Data of the current year (from the first day, 00:00); the comparison value – if enabled – is calculated from the average of the yearly values logged
LAST YEAR	Data of the previous year; the comparison value – if enabled – is calculated from the average of the values logged the previous year

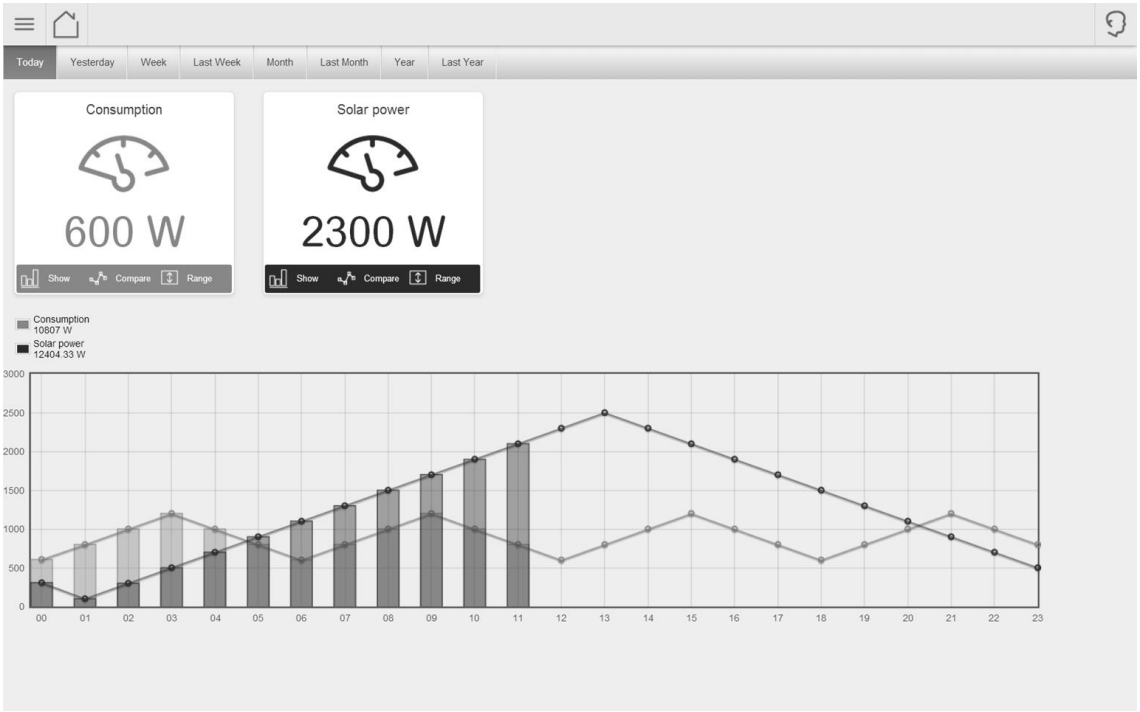
The following screenshot explains the different areas oft he energy graph:


Legend with total power consumption of the corresponding time period
Energy data of the corresponding time period
Average of the corresponding time period
Range of the corresponding time period
Consumption
10006.89 W

In order to change the order of the ENERGY COUNTERS (in which they are shown within the section CONSUMPTION), please follow the steps listed below:

- Select the entry “CONSUMPTION“ under „TECHNOLOGIES“ – „ENERGY“ in the configuration area
- Click on the EDIT button (or the 3 dots beneath the entry)
- Change the order of the ENERGY COUNTERS using the grey button, as already seen with other objects ,too

The following screenshot shows a configuration example with 2 ENERGY COUNTERS, in which one of them shows the energy values produced by a photovoltaic system:



13.3.3 POWER CALCULATION

In case the electrical power should not be available as a KNX objects, it is also possible to calculate it using a VOLTAGE object and one or more CURRENT objects. To achieve this, the flag "ENABLE POWER CALCULATION" must be checked; this causes the section "SUB-OBJECTS FOR POWER CALCULATION" to become visible. Now you can follow the steps below to set up the power calculation:

- Add a VIRTUAL OBJECT to the section "SUB-OBJECTS CONNECTED TO THE ENERGY COUNTER" and define its FUNCTIONALITY as "POWER – MEASURED VALUE"; this value will be refreshed by U.motion KNX Server every time the values of the voltage or current change.
- Now please drag the KNX objects with the voltage and current data into the section "SUB-OBJECTS FOR POWER CALCULATION" or add them in form of VIRTUAL OBJECTS using the corresponding ADD button. The calculation is only executed when:
  - There is ONLY one object with the functionality "VOLTAGE"
  - There is at least one object with the functionality "CURRENT"

Normally the power calculation will use KNX objects for current and voltage; nevertheless, also here the usage of VIRTUAL OBJECTS can make double sense:

- If the voltage value is not delivered by the bus, it can be set as a constant value using a VIRTUAL OBJECT (actuators with current values not always will also provide the voltage)
- It is possible to introduce a constant power factor (as "virtual" current value) for devices which do not provide any measured data, in order to get at least an estimated consumption report.

After the configuration of the necessary objects, U.motion KNX Server will refresh the power value automatically, just as it would come directly from the bus. This value can now either be shown in the VISUALISATION or it can be used again, through the ENERGY COUNTER, for example for the load control.

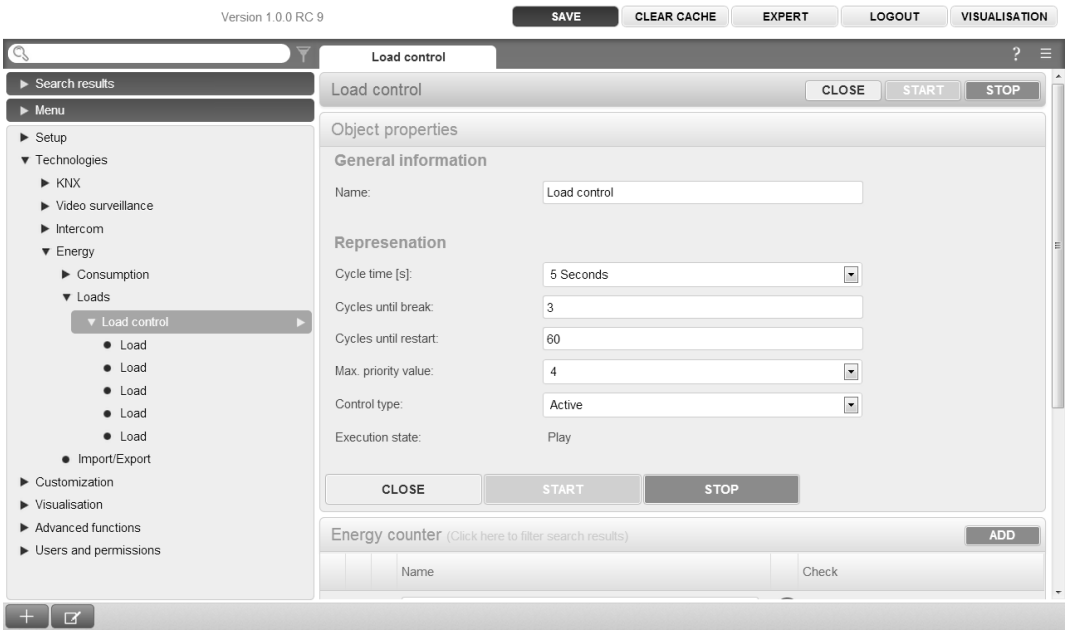
13.4 LOAD CONTROL

13.4.1 GENERAL SETTINGS

U.motion KNX Server is able to control loads (consumers) in the installation and to also to turn the off in front of elevated consumption (by configuring limits and priorities). After return to the normal consumption, the loads are activated again in reverse sequence.

U.motion KNX Server offers an integrated load control, which can be reached through the configuration area by selecting "TECHNOLOGIES", "ENERGY", "LOADS" and finally "LOAD CONTROL". Of course it is possible to create additional load controls, which then can be used in parallel to the standard configuration (e.g. one load control per phase in a 3-phase system).

If the pre-configured LOAD CONTROL entry is selected and its properties window is opened, you will see the following screen:



The section REPRESENTATION offers the following parameters:

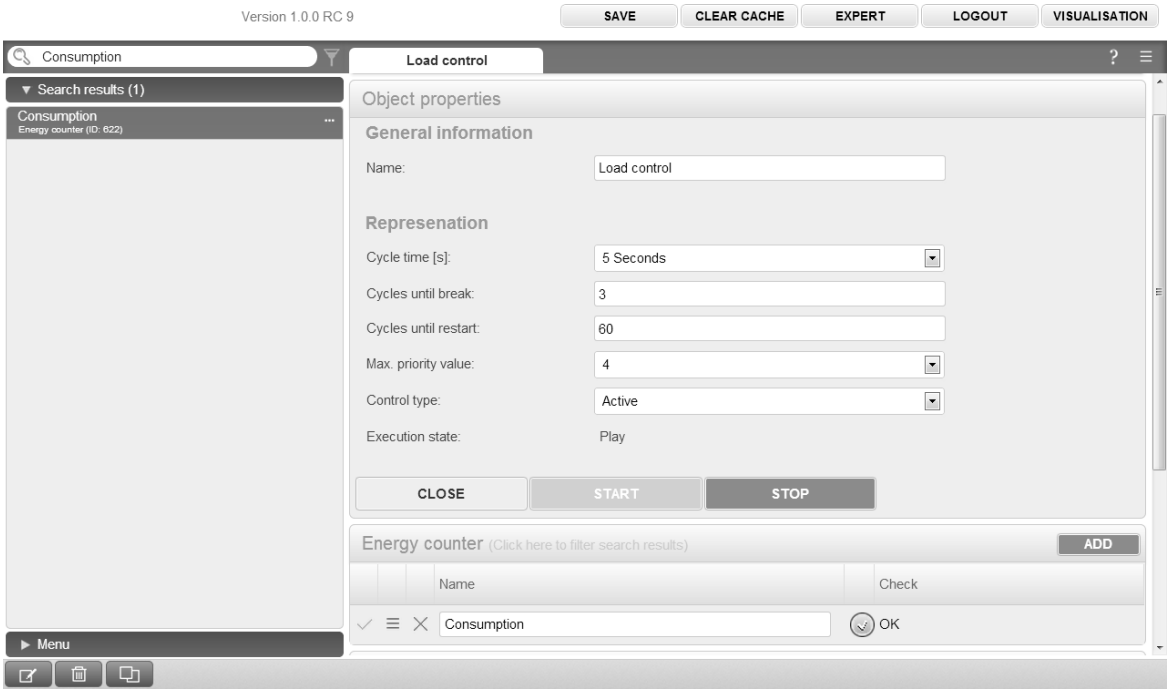
CYCLE TIME	Time (in seconds) of the "base cycle" of the integrated load control logic. When this time expires, the loads are controlled, the configured limits are checked and eventual actions take place.
CYCLES UNTIL BREAK CYCLES UNTIL RESTART	Amount of base cycles (whose cycle time depends on the previous setting) to be executed before the logic increments the priority (and therefore turns off loads), or, in the contrary case, amount of cycles before the logic decrements the priority and switches loads back on. Normally a low amount of cycles is used for the break, meanwhile a high amount of cycles should be set for the restart, in order to prevent a continuous switching of loads.
MAX. PRIORITY VALUE	Maximum amount of handled priority values; the system will not pass the configured value, loads with higher priorities are ignored.
CONTROL TYPE	Defines whether U.motion KNX Server is responsible for the load control (active, default setting) or if the control should be passive, which means through an external load controller. In the second case, U.motion KNX Server is limited to the visualisation oft he received information and doesn't start any actions.
EXECUTION STATE	Shows the state of the load control; normally this field will always show "PLAY"; nevertheless, the load control can be started and stopped using the corresponding buttons inside the properties window, for example in order to adapt changes like adding new loads.

13.4.2 CONNECTION OF AN ENERGY COUNTER

In order to work correctly, each load control must be connected to an ENERGY COUNTER. In order to achieve this, please follow one of the steps below:

- Either use an existing ENERGY COUNTER (check out previous chapter) and drag it into the corresponding section of the load control
- Or create a new ENERGY COUNTER by using the ADD button

In both cases the connected object is shown in the section „ENERGY COUNTER“ and beneath its name also the result of an automatic control (check) is shown, which assures that the used ENERGY COUNTER was configured correctly in order to work in combination with the load control.



The following parameters must be configured correctly within the ENERGY COUNTER in order to be used as reference object:

- Power value (either directly or using the power calculation, as seen before)
- Minimum and maximum power limit, either as “static” value or as sub-objects
- Sub-object “priority”

Preferably also the sub-object “Load over limit” should be configured, which is automatically set to 1 if the logic of the load control is enabled and starts switching off loads, and is set back to 0 as soon as the total load falls back under the configured limit.

If the load control is active, the value connected as „POWER – MEASURED VALUE“ within the ENERGY COUNTER is used as reference; if this value surpasses the configured limit, the load control logic is enabled (once the configured cycles expire) and increments the priority value (in idle state = „0“) to 1; as a result, all loads that have been set to this priority value will be turned off. This process is repeated as long as the total load falls back under the configured limits; until this happens, the priority value is continuously incremented and the corresponding loads are switched off.

Once the total load falls back, the load control logic will work in the opposite way: as long as the load stays within the limit, the loads are turned back on again in the inverted way, naturally always respecting the configured cycle times and amounts.

The load control logic uses a two-level limit in order to prevent hysteresis phenomena (continuous switching of loads); with one-level limits, the total load would fall back under the limit immediately after switching off a single load, what would just cause the logic to turn the load back on again.

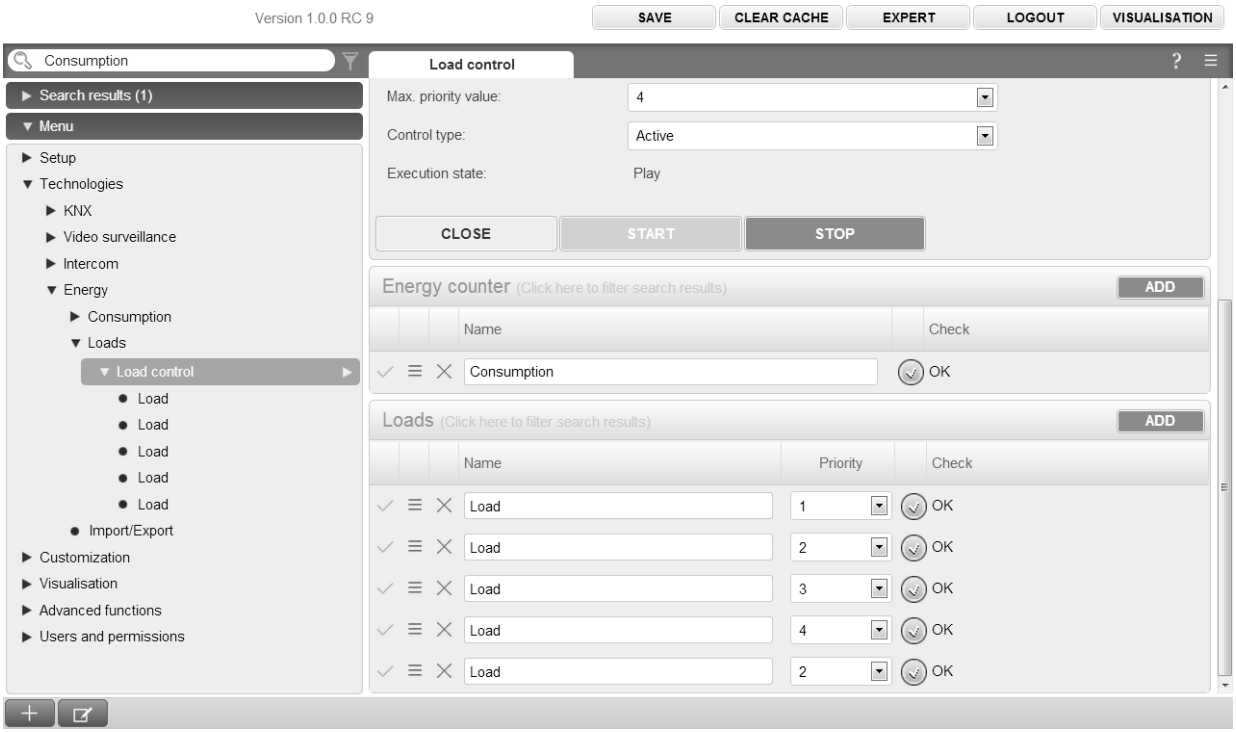
13.4.3 CONNECTION OF ONE OR MORE LOADS

The section "LOADS" within the properties window of the load control it is possible to connect one or more ENERGY COUNTERS, which act as loads (consumers) and must be configured for all the devices that should be actively controlled by the load control logic, as described before.

Even in this case:

- Either a previously configured ENERGY COUNTER can be connected
- Or a new ENERGY COUNTER can be created using the ADD button

In the same way as for the „ENERGY COUNTER" section, also here an automatic check is done, in order to control if all loads present the necessary settings. If this is not the case (e.g. when adding a new counter using the ADD button), the properties window of the related counter must be opened and the missing parameters must be set.



The required parameters are exactly the same as seen in the last chapter. The only difference lies in the following 2 sub-objects, which are required for the single loads:

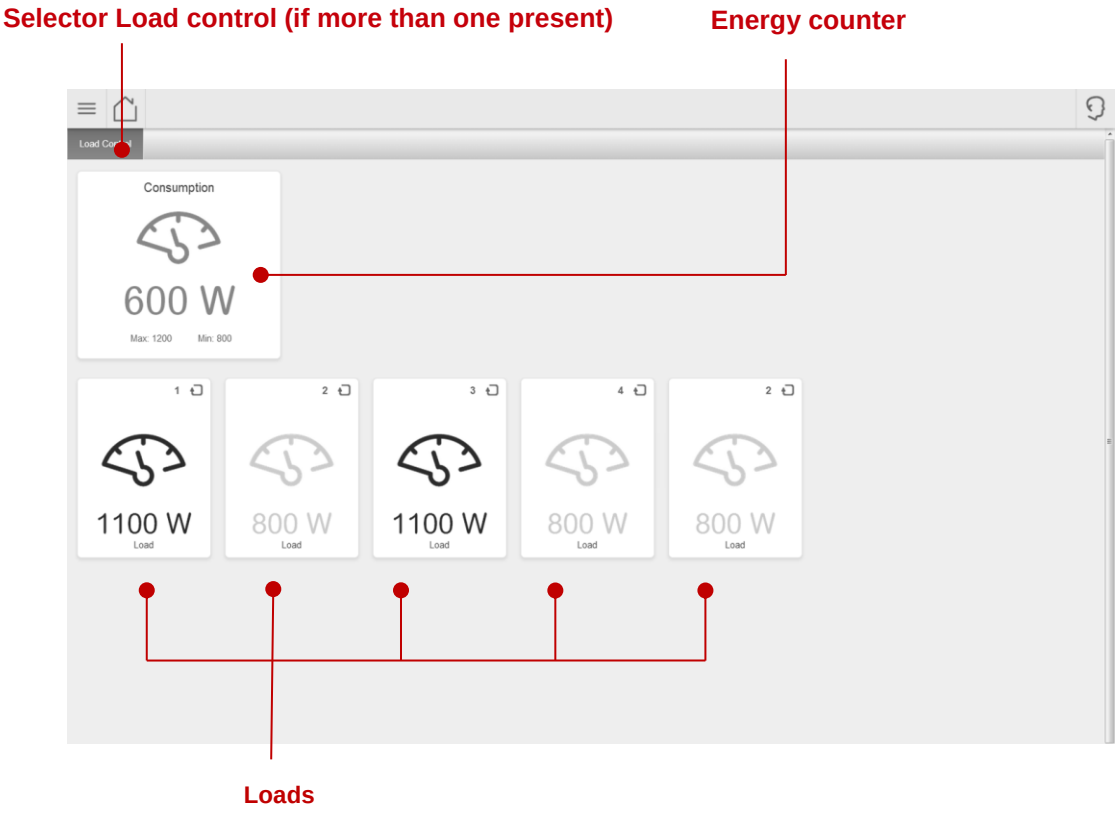
LOAD ON/OFF	Control object used by the load control logic in order to turn the load on or off. This can be either a KNX object of 1bit or 2bit; in the first case, the corresponding output is just turned on or off by U.motion KNX Server (with the risk that the state of the output might be changed by another sensor or another event of the software); in the second case a force (=priority) control of the output is executed, which brings the following 2 advantages: • The state of the load can't be changed by other events (e.g. push buttons in the installation or the VISUALISATION of U.motion KNX Server)

	• The base state of the object is not changed by the priority control, which helps avoiding erroneous control (like unwanted activation) of the loads •
LOAD AUTO/MAN	If present, this object permits the user to independently define through the VISUALISATION whether a load should be controlled by the load control (AUTOMATIC) or should permit only manual control; in the second case, the load control logic will not turn off/on the load, which can be helpful if loads should be temporarily excluded from the load control.

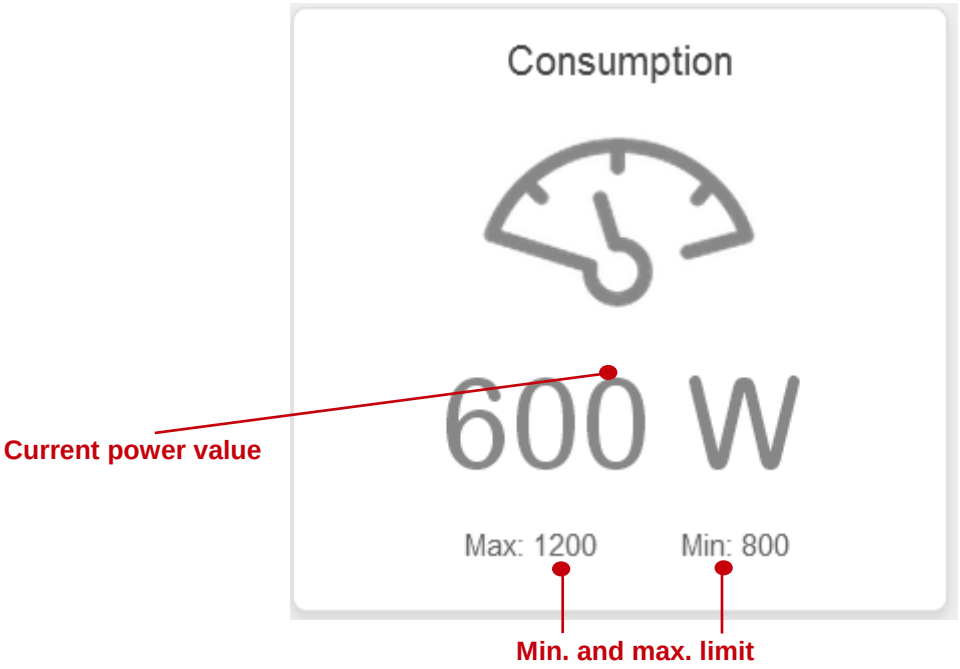
After making changes to the loads connected to a running load control, it is necessary that the load control is restarted using the corresponding buttons in its properties window. Only in this way the changes will be taken over.

13.4.4 REPRESENTATION IN THE VISUALISATION

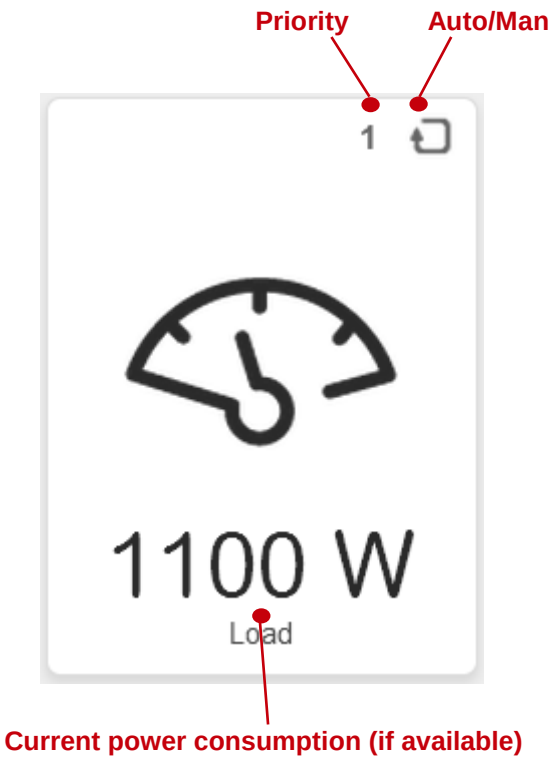
At completed configuration of a load control, the user can find it in the VISUALISATION in the section "LOADS" (by selecting the entry "ENERGY" from the NAVIGATION MENU):



The ENERGY COUNTER in detail shows the following information:



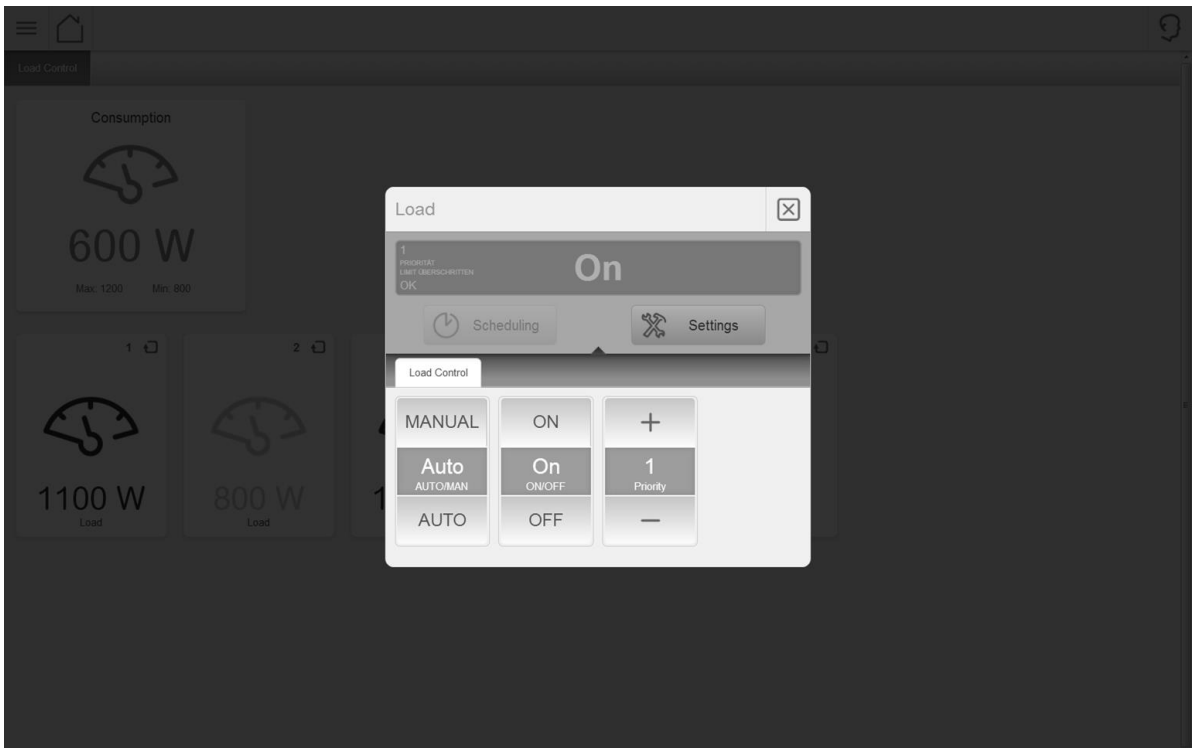
The loads instead are shown in the following way:



Even in this case a click on the ENERGY COUNTERS will open a pop-up window, which permits to adapt the settings of the load control; furthermore, additional details regarding the general consumption or the single loads / consumers can be viewed.

If the ENERGY COUNTER is clicked, it is e.g. possible to adapt the limits of the load control:

If instead a load is clicked, it is possible to modify parameters like the priority of the load or the operating mode (AUTO/MAN) and it is possible to control the load manually:



14 USERS

14.1 INTRODUCTION

In this chapter the user management of U.motion KNX Server is explained and the possibilities of personalization of each user are presented, which allow a safe and convenient use of the VISUALISATION.

14.2 USERS AND USER GROUPS

The authentication on U.motion KNX Server is defined through 2 different object types:

- USER: these objects represent the accounts for accessing the VISUALISATION; the authentication is done by entering user name and password, configured for each USER in U.motion KNX Server. Every USER must belong to a USER GROUP, so that they get certain access permissions (for example: see the whole VISUALISATION, but no access to the ADMINISTRATION area);
- USER GROUP: A USER GROUP has several access permissions assigned. Each USER of a USER GROUP automatically gets the access permissions defined for the USER GROUP.

14.3 CREATE NEW USERS

In order to create a new user, proceed as listed below:

- Open the ADMINISTRATION area
- Select “USERS AND PERMISSIONS” → “USERS”
- Click the ADD button

The following settings will be available for each USER:

NAME	Identifies the USER inside the U.motion KNX Server database (not used for the login)
USERNAME	Username for the authentication on the system – must consist of alphanumeric characters only
PASSWORD	Password for the authentication on the system – must consist of alphanumeric characters only
TRUSTED IP	Optional – enables the automatic authentication on the system when the VISUALISATION is accessed on a PC with the IP address specified here.

Once you have created a new USER, it must be assigned to a USER GROUP to receive the desired access permissions. Simply drag the desired USER GROUP into the area "USER GROUPS TO WHICH THE USER BELONGS".

Furthermore it is possible to connect the user to EVENTS; they permits to execute the following actions on every client device that is currently logged in with the selected user:

- PAGE JUMP: permits to create a page jump to a certain page on all client devices currently running with the selected user (page jump within the browser on default clients and within the app on mobile clients)

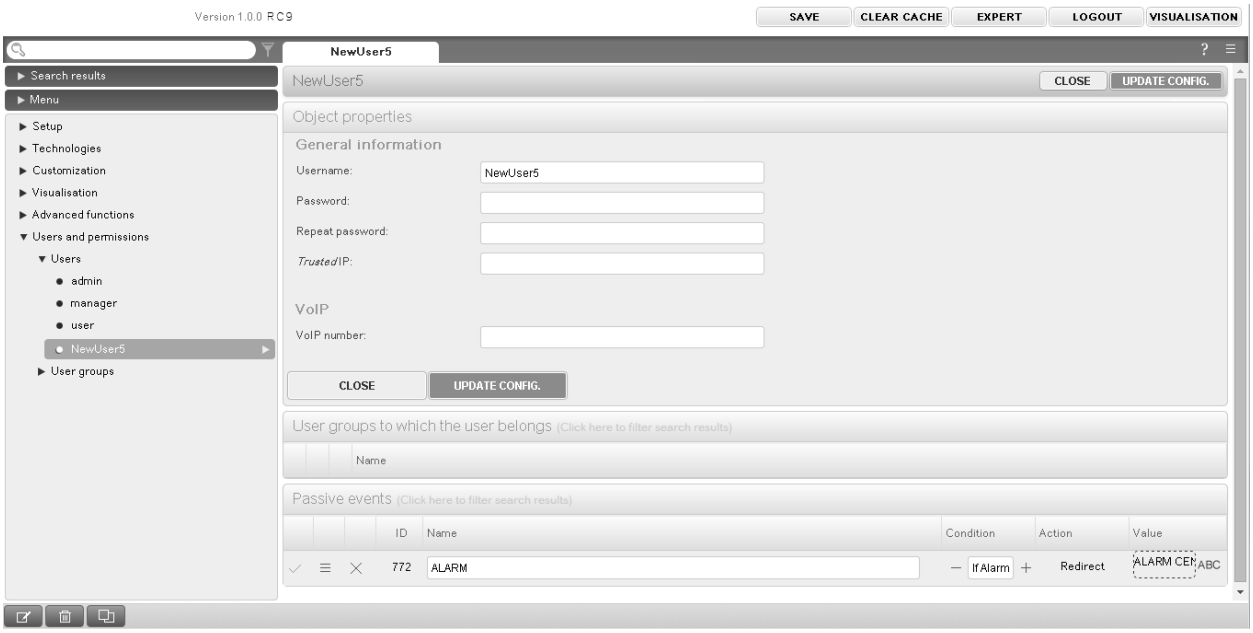
In order to configure a PAGE JUMP, please follow the instructions below:

- Drag the object that should cause the page jump (e.g. a KNX object) into the section „PASSIVE EVENTS“
- Define the CONDITION that should trigger the page jump (the available options depend on the previously selected object)

Now use the column VALUE in order to define the target page, which could be:

- Either an external web page (homepage, web server, etc.)
- Or a ROOM of the software

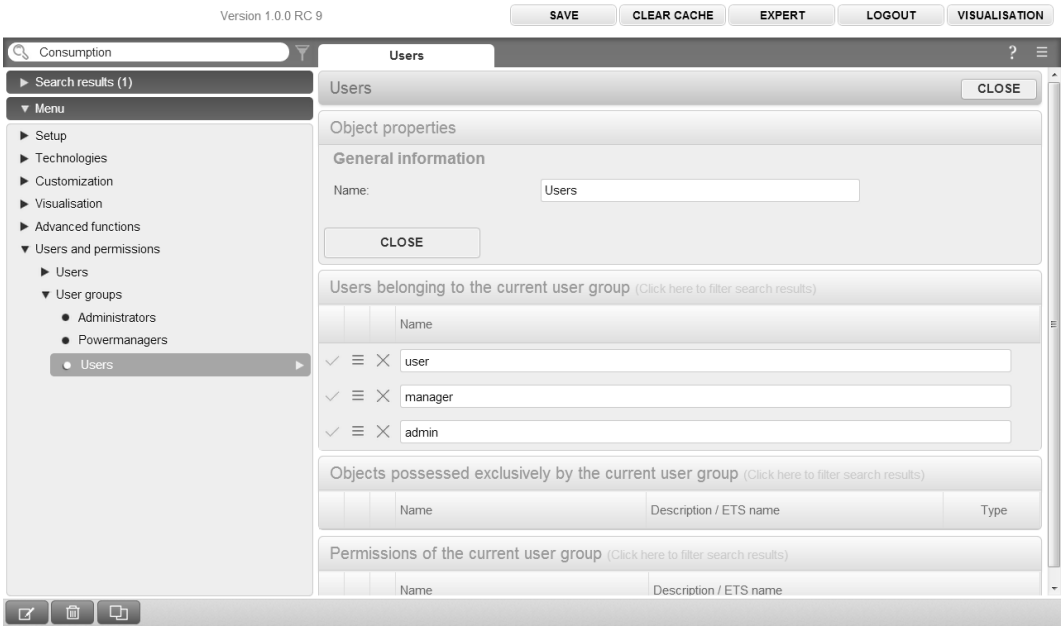
In the first case it is sufficient to insert the URL of the desired page into the text box. In the second case instead, the text box can be changed into a drop zone using the red button; now a ROOM can be selected using the search function and can be dragged into the drop zone. The following screenshot shows an example configuration, in which the room "ALARM CENTRAL" should be opened at every condition change of the object "ALARM", in fact exclusively on the client devices that are currently running with the chosen user:



The configuration of EVENTS for single USERS is very similar to the configuration of EVENTS for objects of type CLIENT (please refer to chapter 11.7 of this manual); meanwhile in that case events are limited to one client device, in case of the user the events are executed on all client devices on which the user is currently logged in.

14.4 USER GROUPS AND PERMISSIONS

Through the properties window of an USER GROUP it is possible to define - beside its name - the different users that should belong the group; even here the users can be localized over the search function and then connected to the section "USERS BELONGING TO THE CURRENT USER GROUP" via drag & drop:



Furthermore, each USER GROUP can be connected to one or several objects of the VISUALISATION; this has to the consequence that these objects from now on belong to the USER GROUP and consequently can only be seen by users that belong to the chosen group. The allocation of objects takes place over the search function, using drag & drop into the section "OBJECTS POSSESSED EXCLUSIVELY BY THE CURRENT USER GROUP".

After the allocation of an object to a USER GROUP, the object won't be visible / accessible to users of other groups any longer. Therefore is very important to pay attention on how objects are assigned to groups, in order to avoid situations in which certain objects or even rooms become inaccessible.
For this reason, it is recommended to connect such objects not only to the desired USER GROUP, but also to the ADMINISTRATOR group; in that way it is at least guaranteed, that the "admin" user will always keep access to all kind of objects.

15 REMOTE ACCESS

15.1 INTRODUCTION

This chapter explains how to configure the network for allowing remote access to U.motion KNX Server and therefore be able to check out the VISUALISATION also from outside of the building.

15.2 REMOTE ACCESS THROUGH INTERNET

To enable the remote access to U.motion KNX Server through internet, please follow the steps below:

- The parameter "GATEWAY" in the network settings of U.motion KNX Server must be set to the IP address of the installed internet router
- The configuration of the installed internet router must be changed and a *Port-Forwarding* rule to the IP address of the installed U.motion KNX Server on port 443 and 22 (data type "TCP") must be created.

If the ports 443 or 22 are already used for other remote accesses, then the port forwarding can be realized through other ports, where the external ports must be forwarded to the IP address and the ports 443 and 22 of the installed U.motion KNX Server.

Example: access through URL https://www.myUrl.com:1443 → port 1443 of the internet router must be forwarded to the IP address and port 443 of the installed U.motion KNX Server).

For detailed information on setting up a *Port Forwarding* rule, please refer to the documentation of the installed internet router.

NOTES